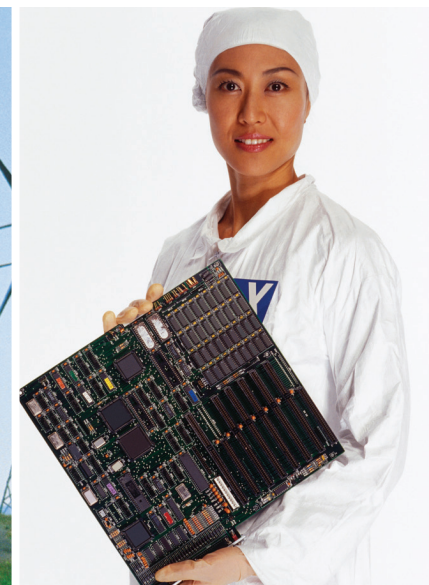


Pennsylvania Career Guide

Commonwealth of Pennsylvania • Department of Labor & Industry



Tom Corbett
Governor

www.dli.state.pa.us

22nd Edition
2011 • 2012





Dear Career Seeker,

Thank you for your interest in the 2011-2012 Pennsylvania Career Guide. This is a valuable tool for students and job seekers beginning their career search. We are proud to provide you with this information and to help you accomplish your goal.

Pennsylvania's diverse economy and world-class workforce have helped us fare better than much of the nation during these difficult economic times. The Pennsylvania Career Guide contains information about growing occupations, educational requirements, training opportunities and salary information. These tools will help students and parents make informed decisions about their goals and what is necessary to achieve them. This knowledge will strengthen Pennsylvania's workforce and economy.

This year's Career Guide highlights jobs in both the allied health and manufacturing industries. Both industries feature in-demand and rewarding occupations. The health care industry includes some of today's most sought-after careers, and various allied health professions anticipate high levels of growth in the coming years. Manufacturing industries are eager to train motivated people for the thousands of projected openings they have each year due to Pennsylvania's aging workforce.

I wish you the best in your journey to a successful career, and thank you for your contribution to a better future for Pennsylvania.

Please feel free to share feedback and comments with the Department of Labor & Industry at 877-493-3282.

Sincerely,

A handwritten signature in black ink that reads "Tom Corbett". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

TOM CORBETT
Governor

How to Use the *Pennsylvania Career Guide*

The ***Pennsylvania Career Guide*** has helped students and job seekers evaluate their career options for more than 20 years. This guide is broken into five sections to help you navigate through the job search process.

The first section helps you to explore a variety of career options while giving you a realistic picture of the job market and dispelling some career myths.

Green, Allied Health and Manufacturing occupations are highlighted in the next section of the guide. This will help you to discover in-demand occupations that you may have not previously considered.

You should also complete the Interest Assessment on pages **5** through **6**. This assessment will examine some of your interests and hobbies and match them with jobs that may fit your personality. Learn about the jobs that match by using the Occupational Data Bank, which contains information on more than 200 occupations in Pennsylvania – including wages, education and job outlook.

Prepare yourself to enter the workforce by reviewing the to-do list on pages **47** to **50** highlighting the steps you should take during your senior year, regardless of your post-high school plans.

The final section of the guide is a collection of resources to help you achieve your goal of securing a job. Tips can also be found on writing an outstanding résumé and acing a job interview.

This publication will help you examine avenues of opportunity, develop realistic goals and most importantly, make informed career choices.

We Welcome Your Input

Your input is always appreciated and helps us improve the *Pennsylvania Career Guide* each year. Please complete our online survey at **www.paworkstats.state.pa.us**. It will only take a minute of your time and will help us better serve you!

If you have questions or comments about this publication, we would like to hear from you. For additional copies of the *Pennsylvania Career Guide*, please contact the Pennsylvania Department of Labor & Industry, Center for Workforce Information & Analysis at **877-493-3282** or at **workforceinfo@state.pa.us**.

We invite you to visit our website **www.paworkstats.state.pa.us** for more career information.



A Note To Teachers and Counselors

The *Pennsylvania Resource Guide* serves as a companion to the *Career Guide*. It includes lesson plans and activities to help you incorporate the *Career Guide* into your everyday curriculum. Look for this icon throughout the *Career Guide* to find information referenced in the *Pennsylvania Resource Guide*.

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The Importance of Finding the Right Job

Jobs are constantly changing. The types of jobs available and the skills needed to fill them have changed considerably over time. The following information shows current occupational trends and predictions for the future. Knowing these trends is necessary to make smart decisions about the career you wish to pursue.

Today:

- On average, workers will change jobs about seven times during their careers.
- Nearly 80 percent of all jobs require some sort of postsecondary training.¹
- Manufacturing is becoming increasingly driven by advanced science and technology, and the industry has a growing need for a workforce with the right skills.
- Employers in general are demanding specific skills and experience in addition to college or postsecondary schooling.
- Additionally, employers often require training beyond high school – either through college or technical schools.
- Skilled jobs requiring less than a bachelor's degree constitute almost half of today's job market.

¹ Source: Bureau of Labor Statistics

Tomorrow:

- Advancement in technology will cause rapid and unpredictable changes in career demands.
- High-tech workers will need to return to school to learn new skills.
- Manufacturing will shift from mass production to flexible production. Workers will need an even wider range of skills than they do today.
- The key to successfully landing jobs will be developing a wide range of skills.
- The worker who is prepared to engage in continuing education, on and off the job, will have the economic advantage in the workplace.
- Traditional skilled trades, such as auto mechanics, plumbers, electricians and dental hygienists will still be in demand.

So You Want to Be a Star?

Many young people dream of fame in the entertainment or sports world. Yet, the number of people aspiring to these glamorous jobs far outnumber the actual openings. In the case of sports, experts estimate that only one out of every 10,000 high school student athletes will make it to the pros. And even if you do get drafted, there's no guarantee you will become rich and famous.

If you excel at sports, don't give up on your dream, but be realistic at the same time. There are still many occupations that allow you to work in professional sports and stay close to the game you love. Here are just a few examples of sports-related careers you may want to consider and prepare for:

- **Broadcaster/Journalist** – Whether they are broadcasting the game live, recording a highlight reel for television or discussing trade deadlines in the newspaper or online, sports reporters and broadcasters are the eyes and ears of the people.
- **Photojournalist** – Uses a still or video camera to catch the action.
- **Coach/Umpire** – Requires a broad knowledge of the sport to either teach or motivate players, or to observe and regulate the players' actions.
- **Facilities Manager** – Oversees the day-to-day operations of an arena or sporting venue.
- **Physical Therapist** – Develops exercise programs to help recovery from injuries and to prevent future injuries. A license is required to practice this occupation.
- **Sports Statistician** – Collects and analyzes sports data for individual games, seasons and careers. Sports announcers rely on statisticians for information.
- **Sports Turf Specialist** – Tends to grass in stadiums, golf courses and tennis courts.

This career guide includes information about hundreds of careers in Pennsylvania – both sports-related and non-sports related. Take a look at our Occupational Data Bank on pages **16** through **37** for more information about many of the occupations that are in demand throughout Pennsylvania.

	High School Student Athletes	High School Senior Athletes	NCAA Student Athletes	NCAA Senior Athletes	Drafted from NCAA	Odds High School Seniors to the Pros
Women's Basketball	439,550	125,586	15,423	3,427	32	1 in 13,800
Men's Basketball	540,207	154,345	17,008	3,780	44	1 in 12,300
Football	1,109,278	316,937	66,313	14,736	250	1 in 4,400
Baseball	472,644	135,041	30,365	6,748	600	1 in 800
Men's Ice Hockey	36,475	10,421	3,945	877	33	1 in 1,100
Men's Soccer	391,839	111,9540	21,770	4,838	76	1 in 5,100

Source: *Estimated Probability of Competing in Athletics beyond the High School Interscholastic Level*, NCAA 2011

Media Mythmaking and Employment Reality

Think for a moment about how the media affect your everyday life. By highlighting certain events or trends, the news media can often guide how we think. Through packaged commercials, the advertising industry can influence what we buy. It's no surprise then that the entertainment media also affect our tastes and interests, even to the point of affecting the sorts of careers we might find interesting and worthwhile.

There is nothing inherently wrong with developing an interest in a career you first saw on television (or in theaters). But it is important to realize that the careers you see on television comedies ("Frasier" or "How I Met Your Mother," for example) and dramas (like "CSI" and "Law & Order" franchises) are glamorized accounts of the fields. Even documentaries (on CourtTV or A&E) and do-it-yourself-shows (such as cooking shows with famous chefs) only demonstrate activities of the job that the viewer is apt

to find interesting, pleasant, fascinating or amusing. Everything else, such as the preparation needed to do the job and the other roles the person might play in the job, is recognized only in passing. This can leave viewers interested in a career even though they are unaware of the schooling and experience required to obtain the career and the daily functions of the job should they get hired.

Consider some of the careers listed below. All of these careers are good careers for those truly motivated enough to pursue them. These occupations all have two things in common: first, highly stylized versions of them receive widespread exposure on television and in movies; second, the number of those hired to do these jobs tends to be small, making these careers very difficult to break into.

Occupational Title	Total Annual Openings	Average Income	Typical Preparation Required
Chefs	71	\$42,230	Postsecondary vocational training
Detectives	116	\$68,890	Related work experience
Psychologists (clinical, counseling and school)	137	\$67,030	Master's degree
Psychiatrists	41	\$133,980	Professional degree
Fashion Designers	9	\$51,270	Bachelor's degree
Kindergarten Teachers	181	\$51,220	Bachelor's degree
Agents (performers, artists and athletes)	19	\$61,500	Work experience plus degree

If you are interested in any of these careers, find out as much as you can about them. Use the Pennsylvania Occupational Outlook Handbook to learn about working conditions, training requirements and similar occupations. Also, please look closely at the Occupational Data Bank on pages **16** through **37**. Increasing your exposure to additional occupations may lead you in a new direction when planning for your future.

Source: CWIA, 2008-18 Long-Term Occupational Employment Projections & Occupational Employment Statistics Survey (May 2009)

Note: Total Annual Openings and Average Income statistics are for Pennsylvania only.



See the
Resource Guide
for more
information

The Only Constant is Change

Career Change through Lifelong Learning

In today's workforce, workers change jobs frequently. Because of downsizing, turnover, technological advancement and economic disturbances, workers often have to take on new duties within their current jobs, or look for new jobs beyond what they're used to doing. Pennsylvanians need to think differently about education and how to prepare, so they can make informed career choices. In other words, job security now depends on being flexible, adaptable and willing to continually learn new skills.

The CHANGES formula provides a framework for keeping your career relevant and thriving.

Careers evolve. Today, workers must get used to change and risk. The average worker will change jobs between seven and nine times in his or her life. These are usually job changes, not career changes. Workers can learn more skills performing the same job function at multiple employers than by sticking with the same company their entire lives.

Hit the books; surf the Internet. Find all the information you can about jobs you might be interested in, including wages, skills needed, growth within the industry and related industries and general economic trends. Always be on the lookout for new job possibilities.

Accomplishments matter. Keep a running list of your major projects and achievements, and refer to it often. Identify the common threads that tie your work history together, and highlight the skills, knowledge and competencies that a new employer can use.

New skills keep you growing. Getting promoted from your current job – or finding a new one – often requires continued learning. Keep up-to-date with software and technology, whether through classes,

on-the-job training at your current job, or part-time or volunteer work.

Get out there and network! Even in these days of instant communication via the Internet, the best way to learn about new job opportunities is through people you know. See our Networking section, on pages **52-53** later in the guide for more information.

Enthusiasm pays off. Be a model employee at all times – always eager to do your job well – because it can have long-term rewards. You never know when you'll need a good reference, or when a good job opportunity might open up at an old employer. When leaving a job, be sure not to burn your bridges.

Sell yourself. Seeking a new job is much like marketing a product. You're "packaging" your image and selling your skills, accomplishments and work ethic to prospective employers. You have to take the initiative and make the sale; you can't wait for opportunities to come to you.

Be sure to visit these sites when looking for more information about changing careers:

- www.paworkforce.state.pa.us

- www.paworkstats.state.pa.us

- www.pacareerlink.state.pa.us

- www.careervoyages.gov

- www.bls.gov/oco

- www.careerclusters.org

- www.quintcareers.com

- www.acinet.org

- www.careerknowhow.com

- www.wetfeet.com

- www.jidaw.com/careerplan.html
(This site is primarily geared to technology careers.)

Getting to Know Yourself

Assess Your Interests

Step 1:

In each group, check the items that describe you. Then count up the number of checkmarks and fill in the total. Be as honest as you can. Remember: There are no wrong answers!

What do you want to be when you grow up?

Starting a new career or changing jobs can be an adventure – a journey that leads you to new and rewarding work opportunities. It can also be confusing and frustrating if you aren't sure where you want to go.

That's why we've provided a self-assessment test to help you determine which careers are a good fit for you. The goal is to find a rewarding job or career that uses your unique set of skills, talents and abilities. People who choose careers that match their interests are more likely to achieve job satisfaction and success. However, self-assessments are just one part of the entire career puzzle. You should consider the results of your test in combination with information from career counselors and other sources.

The assessment that follows is based on the Holland Interest Inventory¹, a widely used method of matching a person's personality to specific career types.

Let's get started.

	-R-	-I-	-A-	-S-	-E-	-C-
Are You:	<input type="checkbox"/> Practical	<input type="checkbox"/> Scientific	<input type="checkbox"/> Imaginative	<input type="checkbox"/> Helpful	<input type="checkbox"/> Sociable	<input type="checkbox"/> Orderly
	<input type="checkbox"/> Mechanically inclined	<input type="checkbox"/> Precise	<input type="checkbox"/> Intuitive	<input type="checkbox"/> Idealistic	<input type="checkbox"/> Ambitious	<input type="checkbox"/> Accurate
	<input type="checkbox"/> Shy or modest	<input type="checkbox"/> Observant	<input type="checkbox"/> Romantic	<input type="checkbox"/> Generous	<input type="checkbox"/> Witty	<input type="checkbox"/> Conscientious
	<input type="checkbox"/> Reliable	<input type="checkbox"/> Curious	<input type="checkbox"/> Creative	<input type="checkbox"/> Cooperative	<input type="checkbox"/> Argumentative	<input type="checkbox"/> Efficient
	<input type="checkbox"/> A nature lover	<input type="checkbox"/> Analytical	<input type="checkbox"/> Independent	<input type="checkbox"/> Friendly or cheerful	<input type="checkbox"/> Persuasive	<input type="checkbox"/> Methodical
	<input type="checkbox"/> Athletic	<input type="checkbox"/> Self-motivated	<input type="checkbox"/> Sensitive or emotional	<input type="checkbox"/> Responsible	<input type="checkbox"/> Self-confident	<input type="checkbox"/> Careful
Can You:	<input type="checkbox"/> Work on cars	<input type="checkbox"/> Solve math problems	<input type="checkbox"/> Play a musical instrument	<input type="checkbox"/> Teach others	<input type="checkbox"/> Convince others to see things your way	<input type="checkbox"/> Keep accurate records
	<input type="checkbox"/> Solve mechanical problems	<input type="checkbox"/> Conduct research	<input type="checkbox"/> Act or perform	<input type="checkbox"/> Mediate disputes	<input type="checkbox"/> Lead a group	<input type="checkbox"/> Write a business report
	<input type="checkbox"/> Start a campfire	<input type="checkbox"/> Analyze data	<input type="checkbox"/> Write stories or poems	<input type="checkbox"/> Lead a group discussion	<input type="checkbox"/> Sell things or promote ideas	<input type="checkbox"/> Make charts and graphs
	<input type="checkbox"/> Read a blueprint	<input type="checkbox"/> Think abstractly	<input type="checkbox"/> Dance	<input type="checkbox"/> Work with others	<input type="checkbox"/> Entertain guests	<input type="checkbox"/> Operate office machines
	<input type="checkbox"/> Fix electronic equipment	<input type="checkbox"/> Perform laboratory work	<input type="checkbox"/> Sketch, draw or paint	<input type="checkbox"/> Plan or supervise an activity	<input type="checkbox"/> Manage people or products	<input type="checkbox"/> Work well within a system
	<input type="checkbox"/> Play a sport	<input type="checkbox"/> Do complex calculations	<input type="checkbox"/> Work independently	<input type="checkbox"/> Offer others guidance	<input type="checkbox"/> Give talks or speeches	<input type="checkbox"/> Use a computer
Do You Like To:	<input type="checkbox"/> Hunt or fish	<input type="checkbox"/> Use computers	<input type="checkbox"/> Decorate	<input type="checkbox"/> Do volunteer work	<input type="checkbox"/> Belong to clubs	<input type="checkbox"/> Play board games
	<input type="checkbox"/> Build or repair things	<input type="checkbox"/> Read scientific magazines	<input type="checkbox"/> Take photographs	<input type="checkbox"/> Organize parties	<input type="checkbox"/> Start or lead a social organization	<input type="checkbox"/> Collect items
	<input type="checkbox"/> Operate tools and machinery	<input type="checkbox"/> Use a telescope	<input type="checkbox"/> Attend concerts or plays	<input type="checkbox"/> Play team sports	<input type="checkbox"/> Meet important people	<input type="checkbox"/> Work on home improvement projects
	<input type="checkbox"/> Be physically active	<input type="checkbox"/> Experiment or observe events	<input type="checkbox"/> Collect artwork	<input type="checkbox"/> Babysit or work with children	<input type="checkbox"/> Make decisions affecting others	<input type="checkbox"/> Build models
	<input type="checkbox"/> Work outdoors	<input type="checkbox"/> Play chess	<input type="checkbox"/> Read fiction, plays and poetry	<input type="checkbox"/> Be the center of attention	<input type="checkbox"/> Win awards	<input type="checkbox"/> Work with numbers
	<input type="checkbox"/> Use your hands	<input type="checkbox"/> Work independently	<input type="checkbox"/> Work on crafts	<input type="checkbox"/> Attend meetings	<input type="checkbox"/> Run a political campaign	<input type="checkbox"/> Be responsible for details
	Total for "R"= <input type="text"/>	Total for "I"= <input type="text"/>	Total for "A"= <input type="text"/>	Total for "S"= <input type="text"/>	Total for "E"= <input type="text"/>	Total for "C"= <input type="text"/>

¹. Dr. John Holland's RIASEC model of occupations is the basis of most contemporary career inventories. It classifies an individual's personality as Realistic, Investigative, Artistic, Social, Enterprising, or Conventional, and it matches those classifications to fitting vocations.

Step 2:

Using your totals, identify the three letters that have the highest scores. Record them in the spaces below:

**My
Interest
Code**

Step 3:

To the right are descriptions for each of the six interest codes. Take a minute to read the descriptions for the areas that match your interest code from Step 2.

Did you know...

You can always talk with your guidance counselor about this interest assessment to discuss what other options you may have that are not listed on this page.

R = Realistic

Is skilled at working with tools, mechanical or electrical drawings, machines or plants and animals. Generally avoids social activities like teaching, healing and informing others. Sees self as practical, mechanical and realistic.

Possible occupations include:

- Welders (pg. 19)
- Packaging Machine Operators (pg. 20)
- Electricians (pg. 21)
- Truck Drivers (pg. 34)
- Environmental Engineers (pg. 33)

I = Investigative

Is good at understanding and solving science and math problems. Generally avoids leading, selling or persuading people. Sees self as precise, scientific and intellectual.

Possible occupations include:

- Pharmacists (pg. 30)
- Financial Analysts (pg. 24)
- Cardiovascular Technologists (pg. 30)
- Systems Analysts (pg. 32)
- Chemists (pg. 25)

A = Artistic

Is strong in areas such as creative writing, drama, crafts, music or art. Generally avoids highly ordered or repetitive activities. Sees self as expressive, original and independent.

Possible occupations include:

- Librarians (pg. 27)
- Graphic Designers (pg. 24)
- Technical Writers (pg. 33)
- Photographers (pg. 32)
- Architects (pg. 33)
- Writers and Authors (pg. 33)

S = Social

Is good at teaching, counseling, nursing or giving information. Generally avoids using machines, tools or animals to achieve a goal. Sees self as helpful, friendly and trustworthy.

Possible occupations include:

- Child Care Workers (pg. 26)
- Secondary School Teachers (pg. 26)
- Social Workers (pg. 30)
- Personal Financial Advisors (pg. 24)
- Registered Nurses (pg. 29)

E = Enterprising

Is good at leading people and selling things or ideas. Generally avoids activities that require careful observation and scientific, analytical thinking. Sees self as energetic, ambitious and sociable.

Possible occupations include:

- Lawyers (pg. 23)
- Purchasing Agents (pg. 19)
- Industrial Engineers (pg. 19)
- Construction Supervisors (pg. 21)
- Claims Adjusters (pg. 22)
- Transportation Supervisors (pg. 34)

C = Conventional

Is good at working with written records and numbers in a systematic, orderly way. Generally avoids ambiguous, unstructured activities. Sees self as orderly and good at following a set plan.

Possible occupations include:

- Bookkeeping & Accounting Clerks (pg. 22)
- Billing Clerks (pg. 22)
- Cost Estimators (pg. 21)
- Legal Secretaries (pg. 23)
- Computer Support Specialists (pg. 32)
- Management Analysts (pg. 23)

Have a Career in Mind? Try It Out First

Find something you enjoy doing, then find a way to get paid for doing it.

That was the simple, yet profound, advice a mentor once offered his young protégé. Too often, however, students and career seekers do the opposite: they decide on a high-paying or high-prestige job first, then try to make themselves “like” the job or the course of study necessary to obtain it. Or they choose an occupation based on what sounds good (or that others want them to pursue) rather than a career that’s actually something they’d enjoy doing.

The key is to learn more about various occupations and determine which ones appeal to you. But if you’re still in school, or between careers, how do you do that? Luckily, there are several ways to gain information and experience in fields you might find interesting.



Part-time Employment A part-time job offers many advantages beyond earning some extra money. It’s also a way to gain valuable experience in a particular field – experience that will allow you to judge whether you’d like to make the job your career. As a bonus, performing well at your job will earn you good references for future employment.

Job Shadowing Job shadowing allows you to directly observe someone at work. You can observe firsthand the day-to-day activities you would be performing in a particular job and learn what skills you

would need to obtain it. Job shadowing also gives you a chance to ask any questions you might have about the job and how to prepare for it. Go to www.jobshadow.org for more information.

Volunteer Work While it doesn’t provide a paycheck, volunteering is another way to gain experience in a field before deciding to pursue it as a career. It’s also an opportunity to give back to the community while building your résumé. Many employers – particularly those in the human services field – welcome enthusiastic volunteers who offer their time in exchange for work experience.

Temporary Help Firms As its name implies, a temporary help firm places career seekers in temporary positions within a company looking for help. The main advantage of this arrangement is that you’re not making a long-term commitment to the job, since the employer knows it’s temporary. It’s a great opportunity to test your skills and to see if you like the type of work the company does. Plus, you can get a feel for several different jobs and fields in a fairly short period of time.

School Clubs Many schools have clubs that focus on specific careers and cater to students interested in those fields. Student clubs often host guest speakers, arrange workplace tours and sponsor trips to conferences and competitions – all of which are excellent opportunities for résumé building and networking.

Community Agencies If there is a YMCA, YWCA or similar agencies in your community, check to see what type of classes they offer. This is a way to gain exposure to a wide range of experiences, one of which could inspire you enough to consider a career in the field.

Internships Internships are temporary working arrangements – usually offered to students – made with a company or organization. An internship may last a few weeks or a few months, and can be paid or unpaid. Often, they are done for college credit, depending on the circumstances. Completing an internship will give you valuable work experience, a résumé credit, a good reference and professional contacts.

Regional Career Education Partnerships For Youth (RCEPs) The Commonwealth of Pennsylvania established Regional Career Education Partnerships for Youth, “RCEPs,” to help students make informed choices about the education and training they need to pursue careers that are right for them. These RCEPs work to give students better opportunities to gain the knowledge and skills critical for success in college and the workplace.

Over the past two years, almost 235,000 students have connected to more than 9,000 businesses that provide them with career awareness and work-based learning opportunities like **job shadowing**, mentoring, **paid and unpaid internships and apprenticeships**. Employers also visit classrooms to discuss the knowledge, skills and education level they expect their employees to possess. Experiences like these, combined with rigorous academics and career-related skills development, will better prepare students for postsecondary education, and ultimately their career.

Your Detailed Career Search

Pennsylvania's Targeted Industry Clusters and High-Priority Occupations

As the economy changes and adapts to the 21st century, it's important that Pennsylvania not only keeps up with these changes, but also leads in order to stay competitive with the rest of the world.

Pennsylvania has developed a plan to adapt to this changing global marketplace and keep the commonwealth economically strong for years to come.

The first step was to focus on the industry groups, or clusters, which are the most prevalent and that include well-paying, competitive jobs across the state. The commonwealth identified 11 of these "targeted industry clusters," which account for more than three-fifths of the jobs in the state.

Next, Pennsylvania identified occupations with higher wages and career advancement opportunities within those 11 targeted industry clusters. Those occupations are called high-priority occupations. A high level of demand exists for these jobs, and employers could be faced with shortages in filling them. These are the "hot" jobs that Pennsylvania wants you to know about.

As you begin your career search, it's important to understand the difference between an industry and an occupation. An industry is the type of business or organization where you work, while an occupation is the job you actually do at work. An industry cluster is simply a group of industries that are similar to one another. Here are some examples:



Occupation (Job or Career)	Industry (Type of Business)	Industry Cluster (Industry Group)
Dispatcher	General Freight Trucking	Logistics & Transportation
Bank Teller	Commercial Banking	Business & Financial Services
Teacher Assistant	Elementary & Secondary Schools	Education
Production Worker Supervisor	Plastics Product Manufacturing	Advanced Materials & Diversified Manufacturing
Electrician	Commercial Building	Building & Construction

The next three sections of this guide spotlight careers in green, allied health and manufacturing industries. We encourage you to explore the many opportunities in these fields.

Spotlight on Green Jobs

What is a green job?

A great deal of focus today is on the notion of “going green” and the concept of “green jobs.” However, there is no universally recognized consensus on exactly what these terms mean. In other words, an occupation considered to be a green job by one company, may not be by another.

To better understand what it means to be green, and to measure the state of the green economy now and in the future, Pennsylvania defines green jobs as:

Jobs that employ workers in producing or offering products or services that:

- promote energy efficiency;
- contribute to the sustainable use of resources;
- prevent pollution;
- clean up the environment; and
- promote the reduction of harmful emissions.



As Pennsylvania’s green economy grows, one of the biggest questions is, “What are the new career opportunities?” While new jobs are arising due to this green movement, there are also many occupations becoming increasingly green. Green jobs fall into three categories:

Emerging: While some of these jobs currently exist, many are either new or they are growing at a very fast rate due to the green movement. Some of these occupations include geothermal installers and energy auditors.

Evolving: The majority of these jobs require new skills specific to the green sector. One example is construction workers skilled in commercial building who may need new skills to become expert retrofitters.

Traditional: These occupations, while they are not experiencing significant changes to their job duties, are essential to the business operations of green industries. Examples of these occupations included refuse & recyclable materials collectors and welders, cutters, solderers & brazers.

Why should I consider a green job?

While most people agree that it is important to protect the environment, and to find alternatives to fossil fuels as energy sources, these issues might not be strong enough reasons to seek out a green job. There are, however, several good reasons to pursue a career in a green occupation.

For all of the occupations that have been defined as green, a high percentage of these occupations are mid-range technical jobs that require some education beyond high school or technical credentials. While the educational requirements for all green jobs range from a high school diploma to a graduate degree, the majority of these jobs require less than a four-year degree and train you while working on the job, allowing you to earn money while you are learning. These occupations provide a great opportunity for someone preferring technical knowledge to additional academic education.

One of the biggest misconceptions about green jobs is that if you are trained to do a job in this sector you are losing out on the training for more traditional jobs. This simply is not the case. The overwhelming majority of green jobs are similar to traditional jobs, but with the addition of a special work component or additional skill set. It is for this reason that pursuing a career in a green job will make you a stronger candidate for employment, now and in the future, than someone without the specialized training.

So why consider a green career? Green occupations typically pay well; they are currently growing, meaning there are many opportunities for people looking to enter the workforce and the training these jobs require should cost you less because there is funding available through state and federal workforce investment programs.

Spotlight on Green Jobs

Energy Efficiency

Occupations in the energy efficiency sector involve working to reduce the amount of energy used in a variety of areas. People can work in the construction of new buildings, make improvements to existing buildings or adjust industrial processes, all in an effort to lower the amount of energy consumed. They can also work in “demand management,” reducing energy used during peak times, because there is a higher possibility of pollution when the system is strained.

Sample Employers: civil engineering consultants and building construction contractors

Sample Occupations: carpenters, civil engineers, energy auditors, energy engineers and construction laborers

Employment: In Pennsylvania, the energy efficiency sector currently has 21,198 establishments that employ 186,108 workers. This sector accounts for 57 percent of all green employment.

Renewable Energy

Workers in the renewable energy sector are often working in some of the most commonly recognized green occupations. These are the occupations involved in a variety of aspects of alternative fuels, including wind, solar, geothermal and hydroelectric energy sources.

Sample Employers: wind turbine builders and electric utility companies

Sample Occupations: electrical power-line installers & repairers, geothermal installers, industrial machinery mechanics, renewable energy technicians and solar panel installers

Employment: In Pennsylvania, the renewable energy sector currently has 766 establishments that employ 24,507 workers. This sector accounts for 8 percent of all green employment.

Clean Transportation

Individuals working in the clean transportation sector are responsible for making sure that people can get where they need to go while reducing adverse effects on the environment. They work in areas of public transportation (railroads and subways) or in vehicle manufacturing (cars, planes and parts), all in an effort to reduce the carbon footprint of transportation.

Sample Employers: aircraft manufacturers and transportation management companies

Sample Occupations: industrial engineering technicians and machinists

Employment: In Pennsylvania, the clean transportation sector currently has 696 establishments that employ 28,192 workers. This sector accounts for 9 percent of all green employment.

Pollution Prevention & Environmental Cleanup

Individuals working in the pollution prevention and environmental cleanup sector are responsible for restoring the rivers, lakes and polluted land to a more natural state. They accomplish this in a variety of ways, including lowering the amount of toxins created during industrial production, improving water and sewer infrastructure systems, by removing contaminants from water systems and cleaning up pollution.

Sample Employers: scientific research facilities and water treatment plant builders

Sample Occupations: chemists, industrial engineers, refuse & recyclable material collectors, water & liquid waste treatment operators

Employment: In Pennsylvania, the pollution prevention & environmental cleanup sector currently has 2,621 establishments that employ 61,192 workers. This sector accounts for 19 percent of all green employment.

Agriculture & Resource Conservation

Individuals working in this sector are responsible for the effective management of natural resources, as finding alternatives to industrial chemicals used in crop production. Workers in these occupations also produce crops for use as biofuels, such as corn for biodiesel.

Sample Employers: corn farms and energy consulting companies

Sample Occupations: agricultural engineers, food science technicians and farm management advisors

Employment: In Pennsylvania, the agriculture & resource conservation sector currently has 2,741 establishments that employ 26,234 workers. This sector accounts for 8 percent of all green employment.

Green Interview



Green Employee

Name: Carlos Jaramillo

Job Title: President

What does your company, Sellair LLC, do?

We make energy-efficiency improvements to residential and commercial buildings. Some of the work we do is also known as weatherization, and its goal is to reduce energy requirements and improve the comfort and indoor air quality of homes.

Why did you decide to start your own company?

I enjoy building and creating new things. The challenge of creating a company and being involved in all operating areas of a business is exciting.

What is your job at the company?

We are just getting started as a company, so I do a little bit of everything. My duties range from recruiting and purchasing to training and working at our customers' homes.

What is your average day like?

If we are starting a new project, I go to the location and meet with the customer. Our team then goes through the house to evaluate the work that is required. I usually spend a few hours at the job site doing some of the work and then go back to the office to take care of administrative things. Some of that work includes ordering material and tools, recruiting and planning the work pipeline.

What is the most exciting thing about working in weatherization?

I like the fact that we are making a big difference in peoples' lives by saving them money and making their homes safer and more comfortable. The increase in comfort levels that results from our work can often be realized immediately. Other results, like utility cost savings, will be realized every month for years.

What type of schooling is necessary to work in your field?

Pennsylvania requires weatherization installers and crew chiefs to complete several training classes to do any weatherization work. There is additional training for auditors who evaluate homes and determine the most cost-effective measures to implement in each particular location.

Have you undergone any additional weatherization training?

Yes. I've completed the three levels of training that are required by the state: installer, crew chief and auditor.

What advice would you give someone thinking of entering the weatherization field?

You have to work hard, but weatherization offers a good opportunity to work at something that benefits people in need as well as the environment. There are many resources out there (i.e. through PA CareerLink®) to get the necessary training so take advantage of them to get into weatherization.

Where do you see yourself in five years?

Hopefully, the business will have grown and I will be busy leading our employees as they help more people save and live more comfortably.

Spotlight on Allied Health



Some of today's most sought-after careers are in the health care industry, where prospects look good for the future, especially as baby boomers begin to retire in the next five to 10 years.

Health care professions can be separated into five categories: doctors, dentists, pharmacists, nurses and allied health professionals. Entry-level education for a career in health care may range from several months, for a diploma, to four years for a bachelor's degree. Approximately 60 percent of new nurses and the majority of allied health professionals are educated in community colleges, typically at the certificate or associate degree level. Advancement is common, allowing graduates to continue

their education and earn advanced degrees through the doctoral level. If you intend to continue your education and pursue a higher degree, be sure that credits from your chosen institution will transfer.

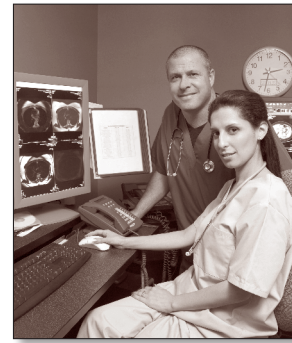
Allied health care occupations constitute about 60 percent of the total number of health care workers, and there are more than 150 different careers to choose from. Career ladders are common in many allied health occupations, allowing graduates to earn advanced credentials. Most health care occupations also require continuing education to retain an active credential. It is truly a lifelong learning experience.

The most important point to remember when considering a career in health care is to "try the profession on." This is easy to do today through the Internet, the wide variety of career and professional websites and videos available to choose from. Just as we try on clothing or test drive a vehicle before buying it, students need to do the same with their career choice. Get out and shadow a professional for several hours to see what is involved in the day-to-day activities, because this is something that you will be doing for the next 20 to 30 years after graduation. It is important to be fully aware of the career and its expectations before selecting a program and a college. Some allied health occupations are responsible for daily, around-

the-clock hospital coverage, while others may only work day shift Monday through Friday. Some have direct patient-care responsibilities, and others are considered supportive and behind-the-scenes, with no direct patient contact.

Traits held in common, regardless of the chosen allied health career, are: attention to detail, excellent oral and written communication, emotional stability and maturity, computer skills and critical thinking. Math and science skills are important in most allied health occupations. A passion for the profession and caring for people is important. Remember, employers are looking for a career professional, not someone simply looking for a job.

Entry into the schools, as well as employment in health care facilities, will typically require a criminal background check, child abuse clearance, physical



examination and drug screening. Although many young adults are tattooed today, visible tattoos are typically not allowed in hospitals. Additionally, visible tattoos must be covered while in the clinical setting. Also, many health care facilities are tobacco-free, and prohibit employees from carrying the odor of smoke.

The popularity of careers in health care allows schools and programs to be selective in their admission criteria and very competitive, even at the community college level. Although admission

may be guaranteed into the college, admission into various health care programs will not. Program capacity is typically based on the availability of qualified instructors, lab space and clinical slots available within the community. Be sure to research accredited programs to find the right fit for you.

Earnings vary in health care, but employees in most health care occupations have a higher earning potential than the average in other industries. Salaries will vary considerably based on level of education, professional responsibilities and location of employment.

A career in health care may be just what you are looking for, if you enjoy helping others and are looking for an exciting, challenging career in one of the fastest-growing segments of our economy.

Spotlight on Allied Health continued

The occupations listed below are considered in-demand by the Pennsylvania Center for Health Careers' Allied Health Workgroup:

Dental Assistants & Hygienists

Dental assistants perform radiographic techniques in all types of dental offices; assist a dental practitioner in all office procedures (taking an impression and making a model of a patient's teeth for study casts); perform routine office management operations; and have excellent oral and written communication skills. Licensed dental hygienists provide clinical, educational and therapeutic services that promote oral health.

Medical and Clinical Laboratory Technicians and Technologists

Medical and clinical laboratory technicians and technologists perform laboratory tests, prepare specimens, operate automated analyzers and microscopically examine specimens to detect abnormalities or disease. Medical lab technicians work under the supervision of the technologist or manager.

Radiologic Technologists

Radiologic technologists produce X-ray images of all parts of the human body to aid physicians in the diagnosis of medical conditions. They prepare and position patients/clients, expose and develop radiographic films, or produce images electronically with computed radiography or digital imaging equipment.

Respiratory Therapists

Respiratory therapists evaluate, treat, educate and monitor patients with lung disorders caused by disease, accident or illness. They help prevent chronic lung disease by counseling those who smoke to quit and by teaching people how to manage their respiratory conditions.

Pharmacists

Pharmacists dispense drugs prescribed by physicians and other health practitioners and provide information to patients about medications and their use. They may advise physicians and other health practitioners on the selection, dosage, interactions and side effects of medications.

Physical Therapists

Physical therapists (PTs) examine individuals and develop a plan, using treatment techniques to promote the ability to move, reduce pain, restore function and prevent disability. In addition, PTs work with individuals to prevent the loss of mobility before it occurs by developing fitness-and wellness-oriented programs for healthier and more active lifestyles.

	Educational Attainment	Projected Employment Growth 2008-2018	Total Annual Openings	Average Entry Level Wage
Dental Assistant	Moderate-Term On-The-Job Training	16.2%	380	\$23,510
Dental Hygienist	Associate Degree	16.5%	261	\$44,920
Medical and Clinical Lab Technologists	Bachelor's Degree	6.8%	197	\$40,500
Medical and Clinical Lab Technicians	Associate Degree	8.3%	245	\$26,800
Radiologic Technologists	Associate Degree	8.5%	242	\$35,900
Respiratory Therapists	Associate Degree	16.7%	147	\$42,830
Pharmacists	Professional Degree	18.5%	418	\$76,470
Physical Therapists	Master's Degree	16.6%	277	\$54,080

Source: CWIA, 2008-18 Long-Term Occupational Employment Projections & Occupational Employment Statistics Survey (May 2009)

Spotlight on Manufacturing

Career Spotlight: Manufacturing Your Future

Today's careers in manufacturing are clean, filled with high technology, automation and robots. Manufacturing offers excellent process-improvement strategies to lead the country out of its economic downturn, employing a highly skilled, highly motivated workforce. Whether your interests lie in improving the layout and efficiency of a company through industrial engineering, or in designing custom tools that enable a company to produce its product as a tool and die maker, the manufacturing sector has something for you.

According to the "Blue Green Alliance Clean Energy Assembly Line Report 2009," more than 42,000 existing manufacturers could experience growth based on increased demand for component parts needed to produce clean energy, with Pennsylvania ranking among the top six states with the potential to create such jobs.

The manufacturing industry is filled with high-demand and rewarding occupations. Faced with an aging workforce, and not enough skilled and adaptable workers to replace them as they retire in the coming years, manufacturing companies are eager to hire and train highly motivated individuals in key occupations: industrial maintenance (IM), CNC operations (CNC), machining (M) and welding (W).

Industrial maintenance focuses on the careers that install, repair and perform maintenance on industrial machinery. CNC operators manufacture products by using computer-controlled machines and robots. Machining occupations require individuals to operate or program machine tools to produce a variety of products. Welding workers weld, braze and solder to manufacture products. The following table highlights 12 specific demand occupations across the four occupational groups.

Job Group(s)	Occupation	Average Entry Level Wages	Average Annual Wage	Percent Growth 2008-18	Annual Statewide Openings
IM	Industrial Engineering Technicians	\$35,160	\$50,250	-0.7	78
IM	Supervisors – Mechanics, Installers & Repairers	\$43,340	\$63,030	-1.1	350
IM	Industrial Machinery Mechanics	\$33,240	\$44,570	8.0	401
IM	Maintenance & Repair Workers, General	\$24,210	\$36,080	0.8	217
IM	Maintenance Workers, Machinery	\$27,660	\$40,200	-5.4	41
CNC, M, W	Supervisors – Production & Operating Workers	\$35,960	\$55,340	-10.8	515
CNC	Computer-Controlled Machine Tool Operators	\$25,440	\$36,090	-4.1	95
CNC	Numerical Tool & Process Control Programmers	\$32,000	\$42,250	-11.1	14
M	Machinists	\$27,570	\$38,670	-6.1	319
M	Tool & Die Makers	\$33,170	\$44,440	-8.6	93
W	Welders, Cutters, Solderers & Brazers	\$26,480	\$35,900	-8.5	388
W	Welding, Soldering & Brazing Machine Operators	\$25,580	\$36,420	-5.1	33

Nearly 200,000 people work in these 12 identified occupations throughout Pennsylvania. Projections indicate that there will be nearly 2,600 openings each year in these 12 occupations combined. These 12 in-demand jobs require some postsecondary education and training, ranging from a year or so of on-the-job training to an associate's degree. For many of these occupations, training is acquired through an apprenticeship, which often articulates to college credit. Industry-recognized credentials, such as those offered by the National Institute for Metalworking Skills (NIMS), are growing in popularity and often provide a benchmark by which an employer can qualify an individual with prior experience, and by which a postsecondary institution can justify the awarding of advanced-placement credit. With the right education and training, you can start on a career path that offers good pay, opportunities for growth and skills that are in high demand. Additionally, the knowledge you gain may lead to college credit, opening new doors for your manufacturing career.

Source: CWIA, 2008-18 Long-Term Occupational Employment Projections & Occupational Employment Statistics Survey (May 2009)

Note: Average Income statistics are for Pennsylvania only.

Manufacturing Interview



Name: Joseph Cabrera
Age: 17
School: Lehigh Career & Technical Institute, Schnecksville

What drew you to an education in manufacturing?

From a very young age, I always liked working with my hands. I was constantly taking things apart to see how they worked and then trying to put them back together. I was also obsessed with electricity — you flip a switch and “boom” the lights go on. I guess I’m intrigued by the whole cause and effect phenomenon. So for me, the manufacturing field is a perfect fit.

What are you currently studying?

Electromechanical/Mechatronics Technology, which combines electricity, industrial electricity, industrial electronics and automated manufacturing.

What is the most interesting part of your lab?

That’s a tough one. There’s so much that’s interesting! I like being engaged, feeling like I’m really doing something. Whether I’m bending conduit, working with motor controls or Programmable Logic Controllers, I find there’s always something new to learn. The technology in the manufacturing industry is constantly changing, so I am never bored. That’s the best part.

What kind of education is required to perform your job?

You don’t necessarily need a four-year degree, but to advance at a rapid level, I am pursuing an associate degree in electrical engineering at the local community college. They have a program where I can actually earn a bachelor’s degree in mechatronics technology from Temple University.

Where do you see yourself in 10 years?

By then I will have finished my bachelor’s degree and I’ll be working in the electromechanical field. Because the electromechanical field encompasses so many types of engineering, I can be pretty flexible and find a job that suites me. With an in-demand field like manufacturing, I don’t think finding a job and building a successful career will be a problem.

What advice would you give to students who are unsure about entering the manufacturing sector?

There are many opportunities available in the manufacturing sector because it involves so many different types of skills. If you’re a problem-solver looking for a challenging career, then electromechanical and the manufacturing field are worth investigating.

Using the Occupational Data Bank

As you consider your future occupation, many questions will arise. Does the job fit my interests and abilities? What does the job pay? How much competition will there be for openings? What kind of training will I need?

Our detailed Occupational Data Bank (ODB) answers many of these questions. Information is provided for more than 300 occupations, which employ almost 90 percent of Pennsylvania's workforce. To access similar data for other occupations or a specific area, please contact the Center for Workforce Information & Analysis (CWIA) at 877-4WF-DATA or by email at workforceinfo@state.pa.us.

For ease of use, the occupations have been grouped into 12 clusters shown in the table below. These represent Pennsylvania's 11 targeted industry clusters (see page 8) and an additional cluster for miscellaneous occupations. The ODB provides a closer look at each the occupations within each of these clusters. If you are unable to locate a specific occupation within this structure, please consult the alphabetical directory at the end of the section. For more comprehensive information, check out the Pennsylvania Occupational Outlook Handbook at www.paworkstats.state.pa.us click on "Products."

Advanced Materials & Diversified Manufacturing	Energy
Agriculture & Food Production	Health Care
Bio-Medical	Information & Communication Services
Building & Construction	Logistics & Transportation
Business & Financial Services	Lumber, Wood & Paper
Education	Other Industries

Your Quick Reference Guide

Background on the information provided in the ODB:

1. Occupational Description - Provides a descriptive title of the occupation.

2. Interest Code - Links the occupation to the categories established in the interest assessment test on pages **5** and **6**.

3. Employment Outlook - Information is based on occupational projections produced by the Pennsylvania Department of Labor & Industry, Center for Workforce Information & Analysis. Projected employment is the number of jobs expected in 2018. Openings per year are the number of job openings per year, due to growth and replacement needs caused by exiting workers. The tables are sorted based on annual openings, from most to fewest within each cluster.

1		2	3		4		5	6	7
Occupation Description		Interest Code	Employment Outlook		Wage Data		HPO / STEM	Green	
			Projected 2018	Openings per Year	PA Entry	PA Average	US Average		

4. Wage Data - Information is from the Occupational Employment Statistics survey. Wages are 2009 annual figures and represent the entry-level and average wage in Pennsylvania and the average wage in the nation.

5. HPO (High-Priority Occupations) - Occupation is designated as a statewide High-Priority Occupation (HPO) – one which is in demand by employers, has high skill requirements and offers a family-sustaining wage.

6. STEM (Science, Technology, Engineering and Mathematics) - Occupation is a special STEM priority occupation requiring substantial mathematics or science preparation. These occupations are essential to maintaining the economy, quality of life, national security and technological superiority of our country.

7. Green - Occupation is designated as a green job in Pennsylvania. These occupations promote energy efficiency, contribute to the sustainable use of resources, prevent pollution, clean up the environment and promote the reduction of harmful emissions.

Advanced Materials & Diversified Manufacturing (AMDM)

The AMDM cluster includes many industries, such as plastics, chemical and metal manufacturing; commercial printing; textile, iron and steel mills and machine shops. Workers primarily set-up and/or operate machinery that makes various products used by consumers and businesses.

Jobs in these industries include high-paying positions such as welders, machinists, electrical engineers, tool & die makers and many more. Some key occupations are listed in the table below. In many of these jobs, workers must be able to perform physical activities for long periods of time. Traditionally, AMDM jobs needed only on-the-job training, but continual technological advancements require a workforce with higher skills and more postsecondary education.

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon W : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
Team Assemblers - work as part of a team to assemble an entire product or component of a product.	RC	41,400	978	\$20,600	\$30,160	\$29,220	HPO	
Shipping & Receiving Clerks - prepare items for shipment and maintain records on incoming and outgoing materials.	CR	27,480	696	\$22,560	\$32,350	\$30,070	HPO	
Production Helpers - assist production workers by performing duties of a lesser skill.	R	25,540	692	\$18,010	\$26,140	\$24,240		
Production Supervisors - coordinate the activities of production and operating workers.	ERC	27,460	515	\$36,680	\$55,800	\$56,170	HPO	Green
Industrial Machinery Mechanics - install, repair or maintain machinery and distribution systems used for industrial production and processing.	R	17,540	401	\$32,810	\$44,940	\$47,100	HPO/STEM	Green
Production Clerks - coordinate the flow of work and materials within or between departments according to production schedule.	CE	12,910	363	\$28,670	\$44,640	\$44,070	HPO	
Inspectors & Testers - inspect, test or weigh assembled parts and products for defects, wear and deviations from specifications.	RC	20,430	345	\$24,010	\$36,540	\$35,550	HPO	Green
Machinists - make or repair metal parts for machines.	R	19,400	319	\$28,240	\$39,270	\$39,780	HPO	Green
Cutting Machine Operators - operate machines to saw or cut metal or plastic material.	R	10,530	318	\$23,170	\$32,080	\$30,690	HPO	
Printing Machine Operators* - set up and operate various printing machines to produce print on paper or other materials.	RC	8,910	208	\$23,590	\$36,330	\$35,370		
Molding Machine Operators - operate molding machines to mold metal or thermoplastic parts.	R	6,620	188	\$21,040	\$30,550	\$30,030	HPO	
Extruding Machine Setters - operate machines to extrude thermoplastic or metal materials into structural shapes.	R	5,190	158	\$26,770	\$37,460	\$33,900	HPO	
Electr. Equipment Assemblers - assemble or modify electrical or electronic equipment.	R	6,510	158	\$19,910	\$29,770	\$31,110	HPO/STEM	
Machine Feeders & Offbearers - feed or remove materials from equipment that is automatic or tended by other workers.	R	7,040	153	\$22,020	\$31,000	\$28,170		
Structural Metal Fabricators - fabricate, lay out, position, align and fit parts of structural metal products.	R	5,630	114	\$29,010	\$38,960	\$35,900		
Painting Machine Operators - operate machines to coat or paint any of a wide variety of products.	R	4,720	112	\$21,960	\$32,680	\$31,050		
Multiple Machine Tool Operators - operate more than one type of cutting or forming machine tool or robot.	R	5,210	112	\$24,510	\$33,570	\$33,250	HPO	
Mixing Machine Operators - operate machines to mix or blend materials.	R	6,020	104	\$25,770	\$37,160	\$34,120		

*This occupation has the same title, but not necessarily the same content, as the 2010 SOC occupation

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon W : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
Photographic Processing Machine Operators* - operate photographic processing machines, such as film developing machines.	R	1,380	104	\$17,050	\$22,010	\$24,760		
CNC Machine Operators - operate automatic machine tools to produce metal or plastic parts.	R	7,650	95	\$25,870	\$36,650	\$35,890	HPO/STEM	
Tool & Die Makers - use machines to make molds, fixtures and dies that are used by other machinists to manufacture metal products.	R	6,410	93	\$35,310	\$45,670	\$48,710	HPO	
Chemical Equipment Operators - operate equipment to control chemical changes or reactions in the processing of industrial or consumer products.	R	3,850	92	\$28,550	\$41,960	\$45,790	STEM	Green
Sewing Machine Operators - operate sewing machines or perform related sewing operations in manufacture of products.	R	4,990	73	\$17,330	\$23,250	\$22,630		
Lathe Machine Tool Operators, Metal & Plastic - operate lathe machines to turn, bore, thread or form metal or plastic materials.	RC	2,860	72	\$25,520	\$37,000	\$35,830		
Forging Machine Operators, Metal & Plastic - operate forging machines to taper or form metal or plastic parts.	R	1,540	71	\$28,230	\$36,580	\$34,100		
Machinery Maintenance Workers - lubricate machinery, change parts or perform maintenance.	R	2,440	41	\$26,370	\$38,500	\$40,310	HPO	
Numerical Tool Programmers - develop programs to control machining of parts by automatic machine tools.	RI	1,040	14	\$32,330	\$45,320	\$48,400	HPO/STEM	
Career Path Icon T : Jobs Requiring Postsecondary Training through a Technical School or Associate Degree								
Welders - make or repair products by using heat and pressure to join metal pieces together.	R	16,780	388	\$26,680	\$36,250	\$37,370	HPO/STEM	Green
Commercial & Industrial Electr. Equip. Repairers - repair, test, adjust or install electronic equipment.	R	4,930	180	\$38,960	\$48,990	\$52,120	STEM	Green
Chemical Technicians - conduct chemical and physical laboratory tests to assist scientists in making qualitative and quantitative analyses of solids, liquids and gaseous materials.	RIC	4,740	166	\$29,170	\$45,780	\$44,200	STEM	Green
Electr. Engineering Technicians - design, build, test, modify and repair electrical and electronic equipment.	RIC	7,010	148	\$33,150	\$54,040	\$56,690	STEM	Green
Mechanical Drafters - prepare detailed working diagrams of machinery and mechanical devices.	RCI	3,850	118	\$32,750	\$49,140	\$51,200	HPO/STEM	
Industrial Engineering Technicians - apply engineering theory and principles to problems of industrial layout or manufacturing production.	IC	3,980	78	\$35,890	\$51,460	\$50,540	HPO/STEM	Green
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Industrial Engineers - design, develop, test and evaluate integrated systems for managing industrial production.	EIR	10,880	354	\$53,670	\$77,310	\$78,450	HPO/STEM	Green
Purchasing Agents - purchase machinery or equipment necessary for the operation of an establishment.	EC	12,550	284	\$38,670	\$58,940	\$60,160		
Industrial Production Managers - plan and coordinate the work activities and resources necessary for the manufacturing process.	EC	5,830	226	\$54,820	\$89,470	\$95,660	HPO	Green
Mechanical Engineers - plan or design tools, engines or other mechanical equipment.	RI	8,870	202	\$51,950	\$77,210	\$82,480	STEM	Green
Electronics Engineers - design and test electronic components and test electronic components and systems for commercial, industrial, military or scientific use.	IRC	6,240	146	\$56,130	\$86,850	\$92,730	STEM	Green
Electrical Engineers - oversee the manufacturing and operation of electrical and electronic equipment.	IRC	5,590	132	\$57,090	\$83,490	\$87,770	STEM	Green
Engineering Managers - plan, direct or coordinate activities in fields such as architecture or engineering.	EIR	5,350	112	\$79,440	\$121,460	\$125,900	STEM	Green
Sales Engineers - sell business goods or services, the selling of which requires a technical background equivalent to a baccalaureate degree in engineering.	ECS	3,640	93	\$53,930	\$86,870	\$94,760	STEM	

Agriculture & Food Production (AFP)

The AFP cluster encompasses growing, processing and distributing food products. Workers raise animals and food, perform landscaping functions and provide utility services. Industries in this cluster include commercial bakeries; fruit and vegetable canning; veterinary services; beverage wholesalers and farming.

Some AFP jobs are seasonal and result in long hours during the summer months. Workers should enjoy working outside through all types of weather.

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon W : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
Farmworkers - manually plant, cultivate and harvest crops. May also attend to livestock and other farm animals.	R	39,630	1,346	\$17,420	\$24,720	\$20,040		Green
Packers & Packagers - pack or package a wide variety of products and materials by hand.	R	33,280	490	\$17,050	\$23,890	\$22,100		
Packaging Machine Operators - tend to machines used to prepare industrial or consumer products for storage or shipment.	R	16,970	353	\$20,330	\$31,060	\$27,580	HPO	
Sales Route Drivers - drive vehicles within established routes or territories to sell goods.	ERS	17,920	343	\$16,750	\$28,860	\$27,070	HPO	
Food Batchmakers - set up and operate equipment that mixes ingredients used in the manufacturing of food products.	R	7,920	267	\$18,600	\$29,340	\$26,820	HPO	
Bakers - mix and bake ingredients according to recipes.	R	9,960	254	\$17,720	\$26,100	\$25,350	HPO	
Farm & Ranch Workers - attend to live farm, ranch or aquacultural animals. May maintain records on animals.	RCI	6,440	216	\$17,290	\$26,220	\$24,040		
Butchers - cut, trim or prepare meat for sale in retail establishments.	R	5,560	176	\$22,380	\$31,760	\$30,190		
Meat Packers - work in slaughtering, meat packing or wholesale establishments preparing meat.	R	3,730	129	\$19,550	\$25,650	\$24,010		
Agricultural Equipment Operators - drive and control farm equipment to till soil and to plant, cultivate and harvest crops.	R	3,730	120	\$23,010	\$32,630	\$25,970		
Meat, Poultry & Fish Cutters - use hand tools to cut and trim meat, poultry and fish.	R	3,270	118	\$18,840	\$25,670	\$23,440		
Food Cooking Machine Operators - operate cooking equipment to prepare food products.	R	1,740	72	\$20,920	\$31,550	\$25,360		
Farming & Forestry Supervisors - oversee the work performed by gardeners, groundskeepers and forestry workers.	RE	2,480	66	\$31,680	\$49,590	\$45,040	HPO	
Separating Machine Operators - operate continuous flow or vat-type equipment; filter presses; shaker screens; centrifuges.	R	1,590	37	\$29,770	\$40,720	\$38,800		
Veterinary Assistants - assist veterinarians with the examination, treatment and medication of animals.	RIS	2,580	32	\$17,980	\$25,040	\$23,660	HPO	
Career Path Icon T : Jobs Requiring Postsecondary Training through a Technical School or Associate Degree								
Veterinary Technicians - perform medical tests for use in the treatment and diagnosis of diseases in animals.	RI	3,790	162	\$24,080	\$31,980	\$31,030	HPO	
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Agricultural Managers* - manage farms, ranches, greenhouses, nurseries, etc., for employers on a paid basis.	ERC	16,930	362	\$41,470	\$52,790	\$65,960	HPO	Green
Veterinarians - prevent, diagnose, treat and control disease and injury among animals.	IR	3,180	101	\$65,570	\$113,810	\$92,570	HPO	

*This occupation has the same title, but not necessarily the same content, as the 2010 SOC occupation

Building & Construction (BC)

The BC cluster employs workers who build homes, office buildings, schools and the roads that get you from here to there. Industries included in this cluster are electrical contracting; highway, street and bridge construction; commercial construction and plumbing and HVAC contracting. The majority of the work is performed outside and the changing seasons result in longer work hours when weather permits. Some companies offer year-round work but many individuals may need to find alternative work in the colder months.

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon W : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
Carpenters - use hand or power tools to build or repair wooden structures such as houses, porches and roofs.	R	55,670	803	\$27,210	\$42,810	\$43,890	HPO	Green
Electricians* - install and maintain electrical wiring, equipment or fixtures.	R	26,350	679	\$33,800	\$55,940	\$51,810	HPO	Green
Construction Laborers - perform tasks involving physical labor at building, highway and heavy construction sites.	R	40,230	416	\$20,700	\$33,290	\$33,590	HPO	Green
Operating Engineers - use power construction equipment to excavate earth, erect structures or pour concrete.	R	17,100	373	\$30,650	\$43,740	\$44,830	HPO	
Plumbers & Pipefitters - build, install or repair piping systems that are used to carry water, steam and other gases.	R	15,410	348	\$32,850	\$52,450	\$50,360	HPO	Green
Construction Supervisors - coordinate the activities of construction and/or extraction workers.	ER	20,550	329	\$42,460	\$64,630	\$62,260	HPO	Green
HVAC Mechanics* - repair and install heating, air conditioning and refrigeration systems in buildings.	R	14,870	286	\$28,380	\$43,570	\$44,860	HPO	Green
Construction Helpers - assist skilled construction workers with basic tasks.	R	10,440	278	\$19,117	\$27,315	\$27,813		
Painters - prepare surfaces for the application of paint, varnish, enamel or lacquer.	R	10,550	229	\$25,220	\$38,880	\$37,610	HPO	
Highway Maintenance Workers - maintain highways, municipal and rural roads. Duties include patching pavement and repairing guard rails.	R	9,920	210	\$23,730	\$34,690	\$35,830		
Construction Inspectors - inspect new and existing structures to ensure compliance with building, zoning and other regulations.	CR	6,250	161	\$32,970	\$46,470	\$54,320		Green
Cement Masons - smooth and finish poured concrete using a variety of hand and power tools.	R	5,430	160	\$27,090	\$39,590	\$39,290	HPO	
Brick & Blockmasons - lay non-stone materials to construct or repair walls, sewers and other structures.	R	6,600	140	\$33,180	\$48,770	\$50,110	HPO	
Sheet Metal Workers - shape sheet metal for use in heating, cooling or roofing projects.	R	5,420	137	\$31,370	\$48,520	\$45,710	HPO	
Roofers* - install or repair the roofs of buildings by applying tile, slate and composition roofing.	R	5,300	129	\$25,540	\$37,210	\$37,880	HPO	Green
Structural Iron & Steel Workers - raise, place and unite iron or steel girders, columns or other structural members to form completed structures or framework.	R	2,260	76	\$34,480	\$52,360	\$48,710		
Carpet Installers - lay and install carpet from rolls or blocks on floors. Install padding and trim flooring materials.	R	3,800	61	\$23,380	\$41,220	\$40,320		
Excavating Machine Operators - operate machinery equipped with scoops, shovels or buckets to excavate and load loose materials.	R	3,120	61	\$27,880	\$40,210	\$39,910		
Paving & Surfacing Equipment Operators - operate equipment used for applying concrete, asphalt or other materials.	R	2,330	51	\$29,950	\$42,660	\$38,020		
Stonemasons - build stone structures. Lay walks, curbstones or special types of masonry.	R	600	13	\$29,290	\$43,400	\$39,850		
Career Path Icon T : Jobs Requiring Postsecondary Training through a Technical School or Associate Degree								
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Cost Estimators - prepare estimates to aid management in determining the price of a product or service.	CE	11,860	304	\$39,180	\$60,120	\$62,060	HPO	
Construction Managers - direct activities in the construction and maintenance of structures and systems.	ERC	11,280	259	\$58,960	\$99,290	\$94,240	HPO	Green

*This occupation has the same title, but not necessarily the same content, as the 2010 SOC occupation

Business & Financial Services (BFS)

The BFS cluster includes a wide range of support services available to today's businesses with a very diverse group of workers, ranging from entry-level positions to management. Individuals could be running a company, managing finances, protecting your legal rights, trading stocks or selling insurance. Industries in this cluster include banking and credit institutions, insurance carriers and brokers, personal and professional business services, advertising and marketing.

Workers in these occupations often have regular day shifts and work in an office environment. Most workers will need basic computer skills to perform their daily functions.

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon W : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
Customer Service Representatives - respond to customer inquiries about products and services. May also handle and resolve complaints.	CES	112,250	3,949	\$22,100	\$33,380	\$32,780	HPO	
General Office Clerks - perform a variety of office duties including record keeping, filing and mail distribution.	CRE	166,250	3,261	\$18,910	\$28,760	\$28,240	HPO	
Janitors & Cleaners - keep buildings clean by operating cleaning equipment and removing trash.	R	113,200	2,493	\$17,740	\$25,630	\$24,560		
Secretaries - schedule meetings, make appointments, type letters and handle incoming mail. May also take dictation.	CES	85,480	1,498	\$21,370	\$30,650	\$32,000	HPO	
Bookkeeping & Accounting Clerks - compute and record data about business transactions in order to keep financial records complete.	C	84,900	1,491	\$23,490	\$35,540	\$35,340	HPO/STEM	
Bank Tellers - receive and pay out money. Keep records of all negotiable items involved in financial transactions.	CE	31,600	1,423	\$19,670	\$24,690	\$24,980		
Clerical Supervisors - oversee activities of clerical and support workers.	ECS	49,460	1,069	\$32,860	\$51,720	\$50,770	HPO	
Security Guards* - patrol grounds or stand guard at entrances to prevent theft, violence or other violations.	SEC	41,640	1,056	\$18,380	\$27,720	\$26,870		
Landscapers & Groundskeepers - maintain property by planting, watering, fertilizing, raking and mowing.	R	50,590	1,022	\$17,970	\$25,610	\$25,430		Green
Administrative Assistants - provide high level administrative support such as conducting research and preparing reports.	CES	43,880	776	\$30,910	\$45,080	\$45,860	HPO	
Bill & Account Collectors - locate and notify customers of delinquent accounts to solicit payment.	CE	19,660	479	\$22,540	\$33,190	\$33,100	HPO	
Telemarketers - solicit orders for goods or services over the telephone.	ECS	10,410	459	\$17,160	\$24,830	\$25,470		
Claims Adjusters - review claims to determine that settlements are in accordance with company procedures.	EC	16,070	422	\$38,850	\$60,310	\$60,200	HPO	
Data Entry Keyers - operate data entry device, such as a keyboard. Verify data and prepare materials for printing.	CR	11,070	324	\$20,320	\$28,060	\$28,400		
Billing Clerks - compile data, compute charges and prepare billing invoices.	C	22,420	304	\$23,480	\$32,200	\$33,270	HPO	
Word Processors - use computer to type letters, reports, forms or other material from rough draft, corrected copy or voice recording.	C	11,540	264	\$25,050	\$32,590	\$34,420		

*This occupation has the same title, but not necessarily the same content, as the 2010 SOC occupation

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon W : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
Payroll & Timekeeping Clerks - compile and post employee time and payroll data.	CER	8,870	240	\$27,040	\$36,620	\$37,070		
Messengers - sort and deliver documents and packages within an organization or to other businesses.	CR	7,270	231	\$19,610	\$28,110	\$27,530		
Interviewers - interview persons by telephone, mail or in person for the purpose of completing forms, applications or questionnaires.	CSE	6,900	209	\$23,480	\$31,900	\$30,120		
Cleaning Worker Supervisors - supervise work activities of cleaning personnel.	ERC	9,330	171	\$27,450	\$40,050	\$37,480		
Insurance Claims Clerks - process new insurance policies, modifications to existing policies and claims forms.	CES	10,740	144	\$27,720	\$38,760	\$36,390	HPO	
Office Machine Operators - operate one or more of a variety of office machines.	C	3,410	130	\$20,830	\$29,060	\$28,610		
Product Promoters - demonstrate merchandise and answer questions for the purpose of creating public interest in buying the product.	AES	3,550	115	\$17,980	\$28,910	\$27,630		
Loan Interviewers - interview loan applicants to elicit information, investigate backgrounds and verify references. Prepares loan request papers.	CE	5,010	108	\$23,110	\$33,330	\$35,180		
Brokerage Clerks - perform clerical duties involving the purchase or sale of securities.	CE	2,230	80	\$30,460	\$40,860	\$42,640		
Career Path Icon T : Jobs Requiring Postsecondary Training through a Technical School or Associate Degree								
Legal Secretaries - perform secretarial duties utilizing legal terminology and documents. Assist with legal research.	CE	14,930	272	\$31,000	\$42,680	\$43,270	HPO	
Paralegals - help lawyers by researching law, investigating facts and preparing legal documents for use in legal actions.	ECS	10,410	242	\$34,420	\$50,260	\$49,640	HPO	
Real Estate Agents - rent, buy or sell property to clients.	ERI	13,950	237	\$30,800	\$50,120	\$52,490	HPO	
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Accountants & Auditors - analyze financial reports and offer advice to businesses or individuals.	CE	58,530	1,256	\$40,880	\$68,610	\$68,960	HPO/STEM	
General Managers - plan, direct and coordinate the operations of a company or organization.	EC	36,970	967	\$54,230	\$106,180	\$113,100		
Lawyers - conduct civil or criminal suits, draw up documents and advise clients about their legal rights.	E	29,410	639	\$66,840	\$132,770	\$129,440		
Chief Executives - formulate policies and provide overall direction to an organization within guidelines established by a board of directors.	ECS	16,040	480	\$83,600	\$167,860	\$173,350		
Management Analysts - analyze organizational systems and suggest improvements to allow more efficient and effective operation.	CEI	26,410	463	\$52,750	\$92,390	\$87,260	HPO	Green

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Insurance Sales Agents - sell life, property, health, automotive and other types of insurance.	ESC	19,780	437	\$33,710	\$73,840	\$62,520	HPO	
Graphic Designers - design or create graphics to meet specific commercial or promotional needs.	AER	10,400	281	\$28,410	\$43,470	\$48,140		
Administrative Services Managers - direct and coordinate the supportive services department of an organization.	EC	9,740	274	\$44,980	\$84,790	\$84,390		
Training Specialists - develop and conduct training programs for employees.	SEC	10,040	261	\$31,540	\$53,120	\$57,280	HPO	
Securities Sales Representatives - buy and sell securities in investment or trading firms.	ECS	9,670	253	\$36,230	\$86,470	\$95,130	HPO	
Financial Managers - plan or direct the financial activities of a company.	EC	17,000	249	\$59,630	\$109,760	\$116,970	STEM	
Sales Managers - coordinate the sales distribution or movement of a product or service to the customer.	EC	10,120	228	\$57,930	\$112,550	\$114,110		
Placement Specialists* - recruit and place workers.	ESC	10,420	228	\$27,090	\$53,070	\$57,830		
Financial Analysts - analyze quantitative information that affects the investment programs of institutions.	ICE	11,770	201	\$47,780	\$81,450	\$86,040	HPO/STEM	
Public Relations Specialists - use various communications media to promote ideas, services or products.	EAS	11,080	171	\$31,870	\$59,370	\$59,150		
Personal Financial Advisors - utilize knowledge of tax and investment strategies to advise clients on financial plans.	SEC	9,880	161	\$44,390	\$98,800	\$91,220	HPO/STEM	
Market Research Analysts* - research market conditions in local, regional or national areas to determine potential sales of a product or service.	IEC	14,040	155	\$37,080	\$61,470	\$66,850	STEM	
Compensation Specialists - conduct programs of compensation and benefits and job analysis for employer.	ICE	5,620	145	\$39,170	\$58,570	\$59,590		
Logisticians - analyze and coordinate the logistical functions of a firm or organization.	EC	5,730	142	\$59,590	\$73,870	\$73,510	STEM	
Loan Officers - evaluate, authorize or recommend approval of loans. Advise borrowers on their financial status and payment methods.	ESC	12,410	140	\$33,470	\$57,290	\$65,900	HPO/STEM	
Insurance Underwriters - review individual applications for insurance to evaluate degree of risk involved and determine acceptance.	CEI	5,100	140	\$41,380	\$69,160	\$65,220	HPO/STEM	
Marketing Managers - determine the demand for products and services, develop pricing strategies and identify potential customers.	EC	5,640	135	\$68,690	\$125,510	\$120,070		

*This occupation has the same title, but not necessarily the same content, as the 2010 SOC occupation

Bio-Medical (BM)

The BM cluster includes industries involved in research and development of health-related technologies. Examples include pharmaceutical preparation manufacturing, surgical and medical instrument manufacturing and medical laboratories.

Most occupations in this field require an advanced degree with a bachelor's being a minimum requirement for employment. Working conditions often include the wearing of protective clothing while working indoors in a controlled environment.

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon W : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
Dental Laboratory Technicians - construct or repair dental appliances.	RI	1,880	37	\$24,980	\$37,250	\$37,980	HPO	
Ophthalmic Laboratory Technicians - cut, grind and polish eyeglasses or other precision optical elements.	R	1,780	34	\$21,980	\$29,130	\$29,610		
Medical Appliance Technicians - construct or maintain medical support devices.	RI	1,160	23	\$23,760	\$36,000	\$38,610	HPO	
Career Path Icon T : Jobs Requiring Postsecondary Training through a Technical School or Associate Degree								
Biological Technicians - assist biological and medical scientists in laboratories. Set up, operate and maintain lab instruments.	RIC	3,520	145	\$29,470	\$43,820	\$41,740	HPO/STEM	
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Chemists - conduct chemical analyses or experiments in laboratories for quality control or new product development.	IR	5,230	150	\$40,610	\$68,950	\$73,240	HPO/STEM	Green
Biochemists & Biophysicists - conduct research on living cells and organisms in order to gain knowledge of complex biological processes.	IRC	2,480	71	\$60,680	\$102,900	\$86,580	HPO/STEM	
Biomedical Engineers - design, develop and evaluate biological and health systems and products.	IRC	1,400	47	\$54,660	\$82,600	\$84,780	STEM	
Natural Sciences Managers - plan, direct or coordinate activities in natural science fields.	IER	1,590	45	\$95,000	\$172,480	\$129,320	STEM	Green



Education (ED)

Workers in the ED cluster teach children and adults the knowledge and skills they'll need to be productive and successful in their career and life. Industries in this cluster include the educational facilities, for elementary school students through university students, as well as technical schools and junior colleges. Also included are museums and historical sites, school bus transportation, child day care services and public agencies that oversee educational programs. Key occupations in the cluster are listed below.

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon W : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
Child Care Workers - provide basic care for children during the day.	S	49,710	1,825	\$16,910	\$20,570	\$21,110	HPO	
School Bus Drivers - transport students or special clients. Ensure adherence to safety rules.	RSC	27,270	446	\$18,020	\$29,530	\$28,660		
Library Technicians - assist librarian by helping readers locate books and materials and answer questions. Sort and shelf books; repair or remove damaged books.	CS	5,230	259	\$19,770	\$29,040	\$31,410		
Coaches & Scouts - teach or coach groups or individuals in the fundamentals of sports.	ERS	9,350	245	\$16,690	\$32,310	\$35,950		
Library Assistants - compile records, sort and shelf books and issue and receive library materials such as pictures, cards, slides and microfilm.	CR	6,210	202	\$16,990	\$24,220	\$25,120		
Residential Advisors - coordinate activities for residents of boarding schools, colleges, care facilities and other establishments.	S	4,890	160	\$19,160	\$27,710	\$26,400		
Self-Enrichment Teachers - instruct courses other than those that normally lead to an occupational objective or a degree.	SA	9,170	120	\$20,330	\$38,510	\$41,210		
Tour Guides & Escorts* - escort persons on sightseeing tours or through places of interest.	SER	2,320	103	\$17,230	\$23,890	\$24,880		
Career Path Icon T : Jobs Requiring Postsecondary Training through a Technical School or Associate Degree								
Teacher Assistants - assist teachers by arranging materials, keeping records or supervising students.	SC	53,790	887	\$17,050	\$24,270	\$24,880		
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Postsecondary Teachers - teach one or more subjects within a prescribed postsecondary curriculum.	SIA	69,850	1,960	\$47,283	\$83,107	\$78,325	STEM	
Elementary School Teachers - provide basic academic and social instruction to young students in public or private schools.	S	83,520	1,952	\$36,150	\$53,960	\$54,330	HPO	
Secondary School Teachers - teach one or more subjects to high school students in public or private schools.	S	46,240	1,443	\$38,900	\$56,740	\$55,990	HPO	
Middle School Teachers - teach one or more subjects to middle school students in public or private schools.	S	30,890	685	\$41,540	\$58,740	\$54,880	HPO	
Special Education Teachers - teach elementary or secondary school subjects to physically, emotionally or mentally challenged students.	SA	24,550	633	\$39,938	\$57,766	\$56,357		

*This occupation has the same title, but not necessarily the same content, as the 2010 SOC occupation

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Education Administrators - plan, organize and direct the activities of educational institutions.	SEI	19,820	610	\$53,482	\$88,304	\$86,353		
Preschool Teachers - conduct activities designed to promote social, physical and intellectual growth in young children, up to the age of 5.	SA	17,000	395	\$18,310	\$26,180	\$29,200	HPO	
Medical Scientists - conduct research in order to understand human diseases and improve human health.	IRS	9,390	368	\$50,810	\$99,600	\$86,710	HPO/STEM	
Vocational & School Counselors - provide educational and vocational guidance for individuals and groups.	S	13,630	283	\$35,240	\$54,140	\$55,970	HPO	
Librarians - maintain library collections of books, audio-visual and other materials.	ACI	7,270	201	\$33,090	\$54,710	\$56,360		
Kindergarten Teachers - teach basic skills to children aged 4 to 6 years.	SA	9,080	181	\$35,730	\$53,880	\$51,550	HPO	
Vocational Education Teachers - teach vocational or occupational subjects to adults or students.	S	4,000	139	\$44,490	\$59,790	\$56,010	HPO	
Instructional Coordinators - develop instructional material that provides guidelines to educators for developing curricula and conducting courses.	SIA	5,460	111	\$35,950	\$57,860	\$61,270		
Adult Literacy & GED Teachers - teach out-of-school youths or adults in remedial education classes, preparatory classes for the GED, literacy or English as a second language.	SA	2,810	33	\$28,450	\$43,780	\$51,080	HPO	



Energy (ENGY)

The ENGY cluster includes many traditional energy industries, as well as emerging “green” industries. Examples include bituminous coal and lignite surface mining, natural gas distribution, hydroelectric power generation, storage battery manufacturing and utility regulation and administration. Many of the occupations in the ENGY cluster resemble those found in manufacturing. Some unique occupations to this cluster include petroleum engineers, nuclear technicians, power plant operators and pump operators. Many jobs in the ENGY cluster offer relatively high wages.

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon W : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
Water Treatment Plant Operators - operate equipment to purify and clarify water for human consumption.	RC	7,650	165	\$30,590	\$43,710	\$42,530	HPO	
Refuse Collectors - collect and dump refuse or recyclable materials from containers into trucks.	R	5,570	156	\$21,680	\$33,880	\$33,880	HPO	Green
Electrical Power-Line Installers - install or repair cables or wires used in electrical power or distribution systems.	R	4,640	147	\$43,060	\$58,220	\$57,510	HPO/STEM	Green
Power Plant Operators - operate machinery to generate electric power.	R	2,100	79	\$47,410	\$59,860	\$62,270	STEM	Green
Roustabouts, Oil & Gas - assemble or repair oil field equipment using hand and power tools.	R	1,620	61	\$22,950	\$30,490	\$34,020		
Refinery Operators - control the operation of petroleum refining or processing units.	RCI	1,870	54	\$42,780	\$55,160	\$59,580		
Gas Plant Operators - distribute gas for utility companies by controlling compressors to maintain specified pressures on main pipelines.	R	1,260	39	\$31,890	\$50,370	\$57,660		
Utility Meter Readers - read meter and record consumption of electricity, gas, water or steam.	CR	1,000	39	\$32,290	\$45,100	\$36,800		
Earth Drillers - operate a variety of drills to tap sub-surface water and salt deposits, to remove core samples and facilitate the use of explosives in mining.	R	980	34	\$28,460	\$43,610	\$42,050		
Extraction Worker Helpers - help extraction craft workers by performing duties of lesser skill.	R	1,040	33	\$25,750	\$31,210	\$37,060		
Mine Cutting & Channeling Machine Operators - operate machinery to cut along the face or seams of coal mines or other mining surfaces to facilitate removing materials.	R	670	27	\$30,900	\$42,100	\$44,530		
Continuous Mining Machine Operators - operate self-propelled mining machines and load materials onto conveyors or into shuttle cars.	R	680	27	\$28,240	\$42,040	\$48,300		
Career Path Icon T : Jobs Requiring Postsecondary Training through a Technical School or Associate Degree								
Electrical Repairers, Powerhouse, Substation & Relay - inspect, test, repair or maintain electrical equipment in generating stations, substations and in-service relays.	R	930	38	\$49,980	\$62,410	\$64,120	HPO/STEM	Green
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Nuclear Engineers - conduct research on nuclear engineering problems or apply nuclear science principles concerned with nuclear waste disposal.	IRC	2,200	50	\$79,730	\$100,350	\$101,500	HPO/STEM	

Health Care (HC)

The HC cluster studies all aspects of the health and well-being of the population. Industries within this cluster include hospitals, nursing homes and physicians' offices. Due to the health care needs of the growing elderly population, this cluster is one of the biggest and fastest growing in Pennsylvania. Health care workers provide medical diagnoses and basic care for the sick and injured. Although most interact directly with patients, some health care technicians perform tasks behind the scenes.

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon W : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
Home Health Aides - provide routine, personal healthcare to elderly or disabled individuals at the person's home or in a residential care facility.	SRC	66,380	1,711	\$17,110	\$22,130	\$21,760	HPO	
Receptionists - greet office visitors and direct them accordingly. May answer phones and perform other clerical duties.	CES	55,980	1,606	\$18,340	\$25,780	\$26,260		
Nursing Aides* - help ensure patient comfort by answering call bells and serving food trays.	SRE	88,440	1,506	\$20,450	\$26,730	\$25,140	HPO	
Personal Care Aides - assist elderly or disabled adults with daily living activities in a non-residential facility or at the person's home.	SRE	45,570	1,468	\$17,020	\$21,930	\$20,420		
Pharmacy Technicians - measure, mix, label and record medications under the direction of a pharmacist.	CRI	19,500	907	\$19,810	\$27,470	\$29,330	HPO/STEM	
Medical Assistants - schedule and prepare patients for exams and treatments. May assist the physician with routine tests.	SCR	28,770	828	\$22,460	\$29,240	\$29,760	STEM	
Social & Human Service Assistants - assist with client services related to human issues, such as counseling and social work.	SC	24,330	611	\$19,910	\$28,170	\$30,100		
Dental Assistants - greet patients, schedule appointments and keep records. May help with laboratory work.	SRE	13,120	380	\$23,510	\$31,280	\$34,140	HPO/STEM	
File Clerks - file correspondence, cards, invoices, receipts and other records in alphabetical or numerical order or according to the filing system used.	C	5,730	284	\$18,870	\$27,150	\$26,800		
Switchboard Operators - relay incoming, outgoing and interoffice calls using a switchboard.	CRS	5,450	136	\$18,680	\$25,480	\$26,280		
Medical Equipment Repairers - test, adjust or repair biomedical or electromedical equipment.	R	2,910	110	\$30,240	\$45,790	\$46,380		
Opticians - design, measure, fit and adapt lenses and frames for clients according to written optical prescription or specification.	ECR	2,450	79	\$24,400	\$32,900	\$34,800	STEM	
Career Path Icon T : Jobs Requiring Postsecondary Training through a Technical School or Associate Degree								
Registered Nurses* - provide nursing care to sick or injured persons. May administer medications and treatments as directed by the attending physician.	SIR	157,300	4,424	\$46,390	\$65,080	\$67,720	HPO/STEM	
Licensed Practical Nurses - care for patients who are less than acutely ill or assist registered nurses with seriously ill patients.	SRI	41,000	1,278	\$32,330	\$42,250	\$41,360	HPO/STEM	
Medical Secretaries - perform secretarial duties utilizing knowledge of medical terminology and hospital, clinic and laboratory procedures.	CE	21,750	463	\$23,300	\$30,680	\$31,820	HPO	
Medical Records Technicians - compile, process and maintain medical records of hospital and clinic patients.	CR	8,580	285	\$22,650	\$33,310	\$35,010	HPO/STEM	
Dental Hygienists - perform dental treatments to prevent tooth decay and other diseases. May instruct patients in proper tooth care.	SCR	8,540	261	\$46,400	\$58,230	\$68,680	HPO/STEM	

*This occupation has the same title, but not necessarily the same content, as the 2010 SOC occupation

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon T : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
Medical Laboratory Technicians - perform routine tests for use in the treatment and diagnosis of diseases.	RIC	11,320	245	\$27,570	\$41,170	\$38,190	HPO/STEM	
Radiological Technicians* - take CAT scans and X-rays or administer non-radioactive materials into patient's blood stream for diagnostic purposes.	RIC	11,880	242	\$37,760	\$52,980	\$55,730	HPO/STEM	
Emergency Medical Technicians - administer first aid treatment to patients as they are transported to a hospital or other medical facility.	SRI	13,970	202	\$20,110	\$30,460	\$33,300	HPO/STEM	
Surgical Technologists - prepare instrument trays for surgical procedures. May assist during an operation by handing surgeons the necessary instruments.	RSC	4,420	181	\$30,330	\$39,220	\$41,310	HPO/STEM	
Respiratory Therapists - assess, treat and care for patients with breathing problems and disorders.	IRS	5,460	147	\$44,550	\$55,310	\$55,200	HPO/STEM	
Physical Therapist Assistants - assist physical therapists in providing physical therapy treatments and procedures.	SR	4,790	131	\$30,380	\$42,780	\$49,810	HPO	
Cardiovascular Technologists - conduct tests on pulmonary and/or cardiovascular systems of patients for diagnostic purposes.	IRS	3,590	97	\$31,550	\$53,720	\$50,720	HPO/STEM	
Medical Transcriptionists - transcribe dictation, translate medical jargon and abbreviations into their expanded forms and edit medical reports.	R	5,830	91	\$24,550	\$33,100	\$33,530	HPO	
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Social Workers - counsel or aid individuals and families who require social service assistance.	S	42,120	1,139	\$27,734	\$40,642	\$45,685		
Physicians & Surgeons - diagnose and treat physical or mental disorders. May specialize in surgery, obstetrics, psychiatry, etc.	IES	32,860	740	\$65,548	\$173,888	\$185,709	STEM	
Mental Health Counselors - counsel individuals with emphasis on prevention and promote optimum mental health.	S	17,090	513	\$24,430	\$37,920	\$41,360	HPO	
Pharmacists - compound and dispense medications following the prescriptions issued by medical practitioners.	IC	13,850	418	\$82,270	\$102,850	\$109,380	HPO/STEM	
Health Services Managers - plan, direct and coordinate the delivery of health care services.	ESI	15,450	388	\$53,310	\$88,820	\$93,670	STEM	
Physical Therapists - develop and organize rehabilitative programs to help patients recover from or adjust to injuries or disabilities.	SRI	11,220	277	\$55,070	\$76,220	\$77,990	HPO	
Substance Abuse Counselors - counsel and advise individuals with alcohol, tobacco, drug or other problems, such as gambling or eating disorders.	S	7,680	247	\$26,820	\$37,870	\$40,810	HPO	
Rehabilitation Counselors - counsel individuals to maximize the independence and employability of persons coping with personal, social and vocational difficulties.	S	8,370	206	\$21,620	\$35,460	\$35,850		
Medical Laboratory Technologists - perform complex medical laboratory tests for diagnosis, treatment and prevention of disease.	IR	9,640	197	\$40,860	\$54,380	\$56,870	HPO/STEM	
Social Service Managers - coordinate the activities of a social service program or community outreach organization.	SEA	8,060	191	\$38,610	\$60,420	\$62,360		

*This occupation has the same title, but not necessarily the same content, as the 2010 SOC occupation

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Occupational Therapists - plan and conduct rehabilitative programs that help disabled individuals perform everyday tasks.	SRI	7,150	183	\$49,030	\$68,530	\$73,380	HPO	
Clinical & School Psychologists - diagnose and treat mental disorders, learning disabilities and cognitive, behavioral and emotional problems.	ISA	6,700	137	\$40,860	\$66,570	\$72,540	STEM	
Physician Assistants - care for patients under the supervision of a doctor. May gather patient histories or order laboratory tests.	ISA	4,440	121	\$41,040	\$67,850	\$87,140	STEM	
Speech-Language Pathologists - assess and treat persons with speech, language, voice and fluency disorders.	SIR	4,620	97	\$48,310	\$70,870	\$69,880		
Dentists - diagnose and treat diseases, injuries and malformations of teeth, gums and related oral structures.	IRS	4,660	92	\$79,230	\$143,900	\$158,770	STEM	
Dietitians & Nutritionists - organize nutritional food service programs to assist in the promotion of health and control of disease.	IES	3,130	81	\$32,830	\$49,470	\$54,340	STEM	



Information & Communication Services (ICS)

The ICS cluster includes businesses that produce and distribute information using movies, television and newspaper. Also included are industries that deal with information technology. ICS workers may write or edit newspaper articles, design computer programs and web pages or provide technical support services.

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon W : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
Telecommunications Line Installers & Repairers - string and repair telephone and television cable for transmitting messages or TV programming.	R	9,130	245	\$37,380	\$54,240	\$50,080	HPO/STEM	
Advertising Sales Agents - sell or solicit advertising, including graphic art, advertising space in publications, custom made signs or TV and radio advertising time.	ECS	8,110	176	\$25,710	\$53,500	\$55,020	HPO	
Photographers - photograph persons, subjects or other commercial products. May develop negatives and prints.	AR	4,350	101	\$22,860	\$34,030	\$35,980		
Reporters & Correspondents - collect and analyze facts about various events for newspapers, television or radio.	AIE	2,630	93	\$21,320	\$37,280	\$43,780		
Radio & TV Announcers - talk on radio or television.	ASE	1,860	82	\$16,700	\$32,960	\$39,910		
Audio & Video Equipment Technicians - set up and/or operate audio/visual equipment.	CS	1,790	72	\$21,260	\$37,200	\$44,460	STEM	
Career Path Icon T : Jobs Requiring Postsecondary Training through a Technical School or Associate Degree								
Computer Support Specialists* - provide technical assistance, in person or by phone, to computer users.	CIR	23,830	744	\$30,350	\$46,570	\$49,930	HPO/STEM	
Architectural & Civil Drafters - use sketches and notes to prepare detailed working plans for engineering or manufacturing projects. May use computer-assisted drafting (CAD) software.	RCA	5,320	166	\$32,300	\$45,290	\$48,740	HPO/STEM	
Telecommunications Equipment Installers & Repairers - install, service or repair telephones and other communication equipment.	R	5,740	146	\$34,770	\$49,360	\$52,850	HPO/STEM	
Civil Engineering Technicians - plan and design facilities under the direction of civil engineers or physical scientists.	RIC	2,920	57	\$31,820	\$45,920	\$47,940	STEM	Green
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Systems Analysts - analyze business and scientific problems for application to electronic data processing systems.	ICR	26,070	929	\$53,090	\$53,090	\$81,250	HPO/STEM	
Applications Engineers* - develop and modify computer applications software. May design customized software.	IRC	16,820	530	\$57,480	\$82,520	\$90,410	HPO/STEM	
Network Systems Administrators* - install, configure and support an organization's network systems.	IRC	16,850	530	\$48,040	\$74,720	\$72,200	HPO/STEM	
Network Systems Analysts - analyze, design, test and evaluate network systems.	IR	10,450	446	\$48,750	\$76,500	\$75,230	HPO/STEM	
Computer Programmers* - develop or write programs to store, find or retrieve information.	IRC	17,030	422	\$44,070	\$71,290	\$74,900	HPO/STEM	
Civil Engineers - design and oversee the construction and maintenance of structures such as roads, bridges and power plants.	RIC	13,030	408	\$52,050	\$76,190	\$82,280	HPO/STEM	Green

*This occupation has the same title, but not necessarily the same content, as the 2010 SOC occupation

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Systems Engineers* - research, design, develop and test operating systems-level software.	IRC	11,390	293	\$60,440	\$94,800	\$97,960	HPO/STEM	
Computer Managers - coordinate the activities of computer-related workers.	ECI	9,600	184	\$74,240	\$122,720	\$123,280	STEM	
Editors - coordinate and edit written material for production.	AES	4,280	145	\$31,210	\$53,990	\$59,340		
Architects - plan and design structures such as private homes, office buildings or factories.	ARI	5,560	119	\$52,570	\$79,800	\$78,530	STEM	Green
Environmental Engineers - design, plan or perform engineering duties in the prevention, control and remediation of environmental health hazards.	IRC	3,200	114	\$54,460	\$78,660	\$83,160	HPO/STEM	Green
Database Administrators* - coordinate changes to computer databases or code.	ICR	5,420	113	\$44,200	\$71,850	\$75,730	STEM	
Producers & Directors - produce or direct stage, television, radio, video or motion picture productions.	AES	2,700	88	\$25,930	\$60,780	\$88,610		
Surveyors - make exact measurements and determine property boundaries to provide land data.	IER	2,280	83	\$34,830	\$53,170	\$58,140	STEM	Green
Writers & Authors - originate and prepare written material.	ASE	3,920	72	\$32,250	\$53,590	\$65,960		
Interior Designers - plan, design and furnish interiors of residential, commercial or industrial buildings.	AER	2,080	59	\$26,170	\$44,420	\$52,100		Green
Technical Writers - write technical materials, such as equipment manuals, appendices or operating and maintenance instructions. May assist in layout work.	AI	1,740	58	\$41,760	\$64,720	\$66,240	STEM	
Computer Hardware Engineers - research, design, develop and test computer equipment for commercial, industrial, military or scientific use.	IRC	1,450	50	\$51,860	\$78,980	\$101,600	STEM	

*This occupation has the same title, but not necessarily the same content, as the 2010 SOC occupation



Logistics & Transportation (LT)

The LT cluster includes industries that are involved in the storage, transportation and distribution of goods we use in everyday life. Workers in this cluster may fly a plane, stack a pallet or perform logistical analysis. Industries include general warehousing and storage, couriers, general freight trucking, specialized trucking, railroads and air traffic control.

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon W : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
General Laborers - manually move freight, stock or other materials.	R	103,040	3,544	\$18,790	\$27,650	\$25,710		
Truck Drivers, Heavy - drive large tractor-trailers to transport and deliver goods and materials.	R	82,860	1,873	\$28,970	\$41,360	\$39,450	HPO	
Industrial Truck & Tractor Operators - use industrial machinery to move materials around a factory, storage yard, warehouse or other location.	R	30,210	830	\$24,850	\$33,130	\$31,500	HPO	
Truck Drivers, Light - drive a small truck, van or automobile to deliver or pick up merchandise.	R	42,970	767	\$18,690	\$30,970	\$32,140	HPO	
Bus Drivers - drive a bus or motor coach, including regular routes, charters and private carriages.	RSC	15,220	231	\$23,060	\$35,110	\$37,060		
Transportation Supervisors - coordinate the activities of transportation workers and material moving equipment operators.	ERC	9,520	219	\$40,460	\$58,600	\$54,950	HPO	
Taxi Drivers & Chauffeurs - drive automobiles, vans or limousines to transport passengers.	R	10,960	196	\$17,050	\$22,460	\$24,580		
Dispatchers - schedule and dispatch workers, work crews, equipment or service vehicles.	CR	6,360	170	\$25,740	\$39,070	\$37,430		
General Laborer Supervisors - coordinate the activities of helpers, laborers or material movers.	ECR	6,790	148	\$33,970	\$50,720	\$45,930		
Transportation & Storage Managers - plan, direct or coordinate transportation, storage or distribution activities.	EC	3,730	120	\$53,510	\$86,560	\$86,560		Green
Railroad Conductors & Yardmasters - coordinate activities of train crews on passenger trains or the activities of workers engaged in railroad traffic operations.	REC	2,240	109	\$37,080	\$48,650	\$48,030		
Locomotive Engineers - drive locomotives to transport passengers or freight.	RC	2,480	100	\$35,590	\$48,040	\$50,870		
Cargo & Freight Agents - expedite and route movement of incoming and outgoing cargo and freight shipments. Take orders from customers and arrange pickup.	CRE	2,710	79	\$26,210	\$40,120	\$39,020	HPO	
Flight Attendants - provide personal services for the safety and comfort of airline passengers.	ESA	2,640	56	N/A	N/A	\$41,630		
Transportation Inspectors - inspect equipment or goods in connection with the safe transport of cargo or people.	RCE	920	38	\$43,490	\$68,220	\$63,050	STEM	
Conveyor Operators - control conveyors that move materials or products.	R	1,650	32	\$22,070	\$30,710	\$30,550		
Rail Car Repairers - diagnose, adjust, repair or overhaul railroad rolling stock, mine cars or mass transit rail cars.	R	1,390	27	\$35,170	\$46,530	\$46,400		
Captains of Water Vessels - command operations of water vessels.	REC	750	26	\$26,690	\$51,600	\$70,500		
Career Path Icon T : Jobs Requiring Postsecondary Training through a Technical School or Associate Degree								
Bus & Truck Mechanics - repair and maintain trucks, buses and other diesel engines.	R	12,580	310	\$28,110	\$39,500	\$42,250	HPO/STEM	
Aircraft Mechanics - repair, overhaul and maintain the engines that propel airplanes, helicopters and jets.	RIC	3,390	59	\$33,150	\$49,570	\$53,280	STEM	
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Airline Pilots - navigate the flight of multi-engine aircraft for the transport of passengers and cargo.	REI	1,700	58	N/A	N/A	\$115,300		

Lumber, Wood & Paper (LWP)

The LWP cluster begins with logging, moves through sawmills to the manufacturing of wood furniture and paper products. Key occupations in the cluster are detailed below.

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon W : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
Paper Goods Machine Operators - operate paper goods machines that perform a variety of functions.	R	6,310	171	\$27,200	\$38,590	\$34,970	HPO	
Cabinetmakers - cut, shape and assemble wooden articles or set up a variety of woodworking machines.	R	4,590	170	\$24,350	\$34,610	\$31,790	HPO	
Woodworking Machine Operators - operate woodworking machines and wood nailing machines.	R	3,870	114	\$20,910	\$30,420	\$27,650	HPO	
Sawing Machine Operators - operate wood sawing machines.	R	1,840	44	\$20,730	\$28,740	\$27,310		
Forest & Conservation Workers - perform manual labor necessary to develop, maintain or protect forest, forested areas and woodlands.	RI	570	24	\$36,320	\$45,000	\$27,740	STEM	Green
Furniture Finishers - shape, finish and refinish damaged, worn or used furniture.	R	830	18	\$24,590	\$33,750	\$29,230		
Logging Equipment Operators - drive logging tractor or wheeled vehicle equipped with accessories to fell a tree.	R	490	12	\$16,860	\$24,480	\$33,400		
Career Path Icon T : Jobs Requiring Postsecondary Training through a Technical School or Associate Degree								
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Foresters - manage forest lands for economic, recreational and conservation purposes.	RI	470	14	\$40,580	\$54,830	\$55,790	STEM	Green



Other Industries

This cluster includes all industries in Pennsylvania that are not found in one of the eleven Targeted Industry Clusters. Some notable groups in this cluster include public administration, wholesale and retail trade, hospitality, tourism and miscellaneous services.

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon W : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
Food & Beverage Servers - provide food and beverage service to customers. May seat patrons, mix drinks or serve food.	RES	364,240	15,634	\$16,625	\$19,838	\$19,695		
Cashiers - receive and distribute money in payment for goods or services.	CER	150,390	7,453	\$16,590	\$18,,950	\$19,810		
Retail Salespersons - sell a variety of products, including furniture, motor vehicles and clothing.	ES	214,410	7,163	\$16,980	\$25,770	\$25,000		
Cooks & Food Preparation Workers - prepare and cook food in restaurants, schools and other establishments.	RCE	121,150	4,085	\$17,497	\$23,056	\$21,634		
Sales Representatives - sell goods for wholesalers or manufacturers to businesses or groups of individuals.	ERS	103,930	2,420	\$37,407	\$67,719	\$67,437	STEM	
Stock Clerks - receive and store materials, equipment and other items from stockrooms and warehouses.	CRE	62,890	1,704	\$17,060	\$23,640	\$23,790		
Retail Sales Supervisors - directly supervise sales workers in retail establishments or departments.	ECS	48,530	1,039	\$27,020	\$43,320	\$39,890		
Maids & Housekeepers - maintain clean and orderly conditions in commercial establishments or private households.	R	39,740	930	\$17,100	\$21,160	\$21,150		
Counter & Rental Clerks - receive orders and payments for rentals, repairs and other services.	CER	19,230	856	\$17,000	\$26,070	\$25,620		
Police Officers - maintain order, protect lives and property and enforce laws in an assigned patrol area.	RES	28,950	838	\$36,330	\$54,500	\$55,620		
Correctional Officers - guard inmates in penal institutions.	RS	20,320	666	\$34,220	\$45,560	\$42,780		
Amusement & Recreation Attendants - schedule the use of facilities, issue equipment, operate rides or tend concession stands.	RCE	11,510	630	\$16,660	\$19,350	\$19,750		
Equipment Cleaners - wash and clean vehicles, machinery and other equipment.	R	13,480	520	\$16,960	\$22,450	\$22,340		
Postal Mail Carriers - sort mail and deliver items on foot or by vehicle along an established route.	CR	13,960	461	\$41,790	\$50,260	\$50,250		
Ushers & Lobby Attendants - collect admission tickets, seat patrons and search for lost articles.	SCE	6,190	449	\$16,650	\$22,680	\$20,290		
Food Service Supervisors - directly supervise workers engaged in preparing and serving food.	ERC	33,580	421	\$23,340	\$35,250	\$31,770		
Maintenance Worker Supervisors - coordinate the activities of mechanics, installers and repairers.	ERC	14,760	350	\$44,790	\$63,800	\$61,350	HPO	Green
Hotel Desk Clerks - accommodate hotel, motel and resort patrons during their stay.	CES	7,110	324	\$61,350	\$21,890	\$21,430		
Order Clerks - receive and process incoming orders for materials or services.	CES	9,320	266	\$19,610	\$28,270	\$30,320		
Laundry Workers - operate washing or dry cleaning machines.	R	9,140	257	\$17,150	\$22,790	\$21,230		

Occupation Description	Interest Code	Employment Outlook		Wage Data			HPO / STEM	Green
		Projected 2018	Openings per Year	PA Entry	PA Average	US Average		
Career Path Icon W : Jobs Requiring Short, Moderate or Long-Term On-the-Job Training								
General Maintenance Workers* - perform maintenance on various machines, equipment or structures to keep them in good working condition.	R	66,250	217	\$24,130	\$36,390	\$36,630	HPO	Green
Fire Fighters - control and extinguish fires to protect people and property. Also maintain fire equipment.	RS	5,490	212	\$32,920	\$47,510	\$47,730		
Non-Retail Sales Supervisors - directly supervise and coordinate activities of sales workers other than retail sales workers.	ECS	13,980	211	\$51,490	\$101,650	\$81,120		
Non-farm Animal Caretakers - feed, water, groom, exercise and care for small and large animals, fish or birds.	RS	7,860	196	\$16,760	\$20,860	\$20,860		
Automotive Body Repairers - repair and refinish automotive vehicle bodies and straighten frames.	R	7,690	188	\$26,880	\$40,000	\$41,270		
Career Path Icon T : Jobs Requiring Postsecondary Training through a Technical School or Associate Degree								
Hairstylists - shampoo, cut, color and style hair. May also apply makeup, dress wigs and perform electrolysis.	EAS	42,110	941	\$16,940	\$24,620	\$26,510		
Automotive Mechanics - adjust, repair and overhaul cars.	R	40,330	904	\$22,740	\$35,810	\$38,200	STEM	
Fitness Trainers - instruct groups or individuals in exercise activities and the fundamentals of sports.	SRE	12,450	327	\$17,530	\$27,690	\$35,920		
Career Path Icon C : Jobs Requiring at least Four Years of Education in College								
Recreation Workers - organize group recreation activities in public, private or volunteer agencies.	SAR	13,670	284	\$16,930	\$26,000	\$25,270		

*This occupation has the same title, but not necessarily the same content, as the 2010 SOC occupation



PennSERVE

PennSERVE, The Governor's Office of Citizen Service Community Service Throughout Pennsylvania

Volunteering with AmeriCorps is an excellent way to obtain work experience, build your résumé and strengthen a college application. The AmeriCorps member commitment requires only a few hours of service per week, so there is still time to do homework, sports and other extracurricular activities. AmeriCorps members also develop personal pride, a sense of community involvement and skills that can be carried over into the workplace.

Depending on hours served, eligibility and individual program policies, AmeriCorps members receive health care, child care, forbearance on student loans, a weekly stipend and an education award (up \$5,350).

PennSERVE connects AmeriCorps members with volunteer programs which foster a spirit of growth and prosperity in communities. In addition, PennSERVE supports a number of AmeriCorps programs that provide services, including but not limited to:

- Training thousands of new volunteers
- Tutoring and mentoring high-risk youth
- Organizing neighborhood-watch organizations
- Assisting crime victims
- Helping to build affordable housing
- Helping seniors live independently
- Cleaning up rivers and streams
- Providing assistance to victims of natural disasters

www.dli.state.pa.us/pennserve • 717-787-1971 • 651 Boas Street • Room 1306 • Harrisburg, PA 17121

Other Career Options

Working for State Government

Pennsylvania is always looking for skilled, dedicated workers to fill state government positions. It's a job with considerable appeal, too. You'll serve your fellow Pennsylvanians, while holding a good-paying job with excellent benefits and the opportunity for advancement.

Contrary to what you may believe, government jobs are not all about paperwork in office buildings. The commonwealth has a wide array of employment opportunities in many different fields for those interested in government services.

Accountants	Ecological Program Specialists	Mortuary Inspectors
Apiary Inspectors	Game Farm Workers	Nuclear Engineers
Auto Mechanics	Geologic Scientists	Nurses (both RNs and LPNs)
Bituminous Underground Mine Inspectors	Health Facility Quality Examiners	Pharmacists
Civil Engineers	Librarians	Revenue Enforcement Agents
Clerk Typists	Liquor Store Clerks	Speech, Language & Hearing Specialists
Driver License Examiners	Locksmiths	Utility Plant Operators
Early Childhood Education Advisors	Mass Transit Analysts	Vocational Rehabilitation Counselors
Drug & Alcohol Treatment Specialists	Milk Sanitarians	And many, many more...

There are two agencies that oversee government employment:

- **The State Civil Service Commission (SCSC)** recruits employees for Civil Service positions with state or local governments. Nearly 70 percent of the 80,000 state employees are Civil Service members. The SCSC's website lists all jobs open within the Civil Service, as well as a "Hot Jobs" link showing immediate vacancies. To be eligible for a Civil Service job, you must complete a written or performance test at an SCSC office location. You can find Civil Service applications and announcements online at www.scsc.state.pa.us

State Civil Service Commission Offices:

Harrisburg

Second Floor
Strawberry Square Complex
320 Market Street
PO Box 569
Harrisburg, PA 17108-0569
Phone: 717-783-3058
TTY: 717-772-02685

Pittsburgh

411 Seventh Avenue
Room 410
Pittsburgh, PA 15219
Phone: 412-565-7666
TTY: 412-565-2484

Philadelphia

Second Floor
10 South 11th Street
Philadelphia, PA 19107-3618
Phone: 215-560-2253
TTY: 215-360-4367

- **The Bureau of State Employment (BSE)** handles non-Civil Service positions in the state government, most of which do not require testing. For more information, visit www.pa.gov and click on the "work" link. There you will find information about job opportunities and internships through the BSE. The BSE also administers the Agency Temporary Services Division, which oversees temporary clerical services.

**For more information,
contact the BSE at 717-787-5703**

Starting Your Own Business

It's a great feeling to be your own boss. If you're motivated, confident, and innovative, starting your own business might well be right for you. There are millions of self-employed business owners in the United States. Being self-employed has its advantages: greater income potential, flexibility in work schedule and the freedom to choose what products and services you provide. Ultimately, the work you do can be more fulfilling and rewarding.

However, self-employment is potentially risky. The United States Small Business Administration reports that half of all new entrepreneurs fail within five years. Keep in mind, business owners are not guaranteed a steady income, sick pay, vacation time or a retirement fund. The hours at your own business may be long, especially at first, as you find yourself handling tasks that you wouldn't have to do as an employee elsewhere.

Do the risks of self-employment outweigh the potential rewards? Only you can answer that question. If you find the prospect of working for yourself and potentially making more money enticing, then entrepreneurship may be for you. But if you prefer the security of a regular paycheck and relatively predictable work hours, working for someone else would be a more appropriate option.

If you're serious about going into business for yourself, do some more research. Examine the table below and check out www.newpa.com or call 866-GO-NEW-PA for more information (and possible assistance) in starting a new enterprise. Also, be sure to visit the Small Business Administration at www.sba.gov, especially the "Thinking About Starting" page, which contains an assessment tool to check your preparedness in starting a new business, in addition to other topics.

Questions About Your Business Idea and the Resources You'll Need

- Is there a market for my product?
- What expenses will I have (including licensing, taxes, equipment, inventory, rent, advertising, utilities and insurance)?
- How will I find customers?
- What is the best way to advertise and much will it cost?
- Who is my competition? How loyal are their customers? How much do they charge and can I afford to charge less to win customers?
- Where can I get assistance with any questions I might have about running a business (including accounting, legal or insurance advice)?
- Do I have the money for start-up costs, or will I have to rely on outside investments or bank loans?

Getting There

What is career and technical education?

The key to a successful and productive society is found in maintaining a highly qualified, skilled and educated workforce. Technical jobs are very much in demand today. Nearly half of the jobs on the market today require advanced technical training, which can be acquired at any two-year college or technical school.

Career and technical education, or CTE, is dedicated to providing secondary students with the education and skills they need to be successfully employed after graduation or to advance to postsecondary education.

Pennsylvania's 84 career and technical centers are in approximately 200 school districts, and are required to offer a sequence of courses supplemented by work-based experiences such as internships or apprenticeships. The work-based experiences are offered during the senior year, as long as a student meets the local requirements.

CTE students have the opportunity to earn recognized industry credentials while still in high school. These credentials can help students find jobs and be successful within their field of study.

How do students benefit from CTE programs?

Research shows that about 60 percent of students hold a job at some time during high school, and by doing so gain valuable experience in the work world. Those who were enrolled in a CTE school had a higher likelihood of finding a paid job and of attending a postsecondary CTE school in the years soon after high school.

How do I learn more about career and technical education?

The first step would be to talk to your school counselor or employment counselor about whether this type of education fits in with your career plans. If possible, visit a nearby CTE school and see firsthand what it offers. You can also find out more online at www.pacareerzone.com or at www.education.state.pa.us

Pennsylvania Skills Certificate

If you pursue career and technical education in high school, you will graduate with a diploma and education in a specific career. That makes you a desirable job candidate, but earning your Pennsylvania Skills Certificate will make you even more attractive to potential employers. To do this, you must complete and pass a test that demonstrates technical skill and knowledge in your career program of study.

This certificate serves two purposes. It rewards you for good performance in your technical studies and is also a credential for obtaining a job after high school. Employers know that a prospective employee with a Pennsylvania Skills Certificate has the skills to do the job well. An instructor or counselor at a CTE school can provide you with the necessary details on achieving Pennsylvania Skills Certification.

CTE Programs of Study

The CTE Programs of Study are educational plans that connect the secondary career and technical programs to postsecondary degree, diploma or certificate programs. These programs prepare today's students for High Priority Occupations (HPO) which include career categories that are in high demand by employers, have higher skill needs and are most likely to provide family-sustaining wages.

Benefits of CTE Programs of Study:

- Saving money on college tuition
- Saving time by shortening college attendance
- Getting on the right career pathway
- Entering the job market ready
- Getting an education

ADDITIONAL CAREER RESOURCES

To learn more about the different careers in Pennsylvania visit the PA Career Zone. www.pacareerzone.com

The Pennsylvania Higher Education Assistance Agency provides assistance for individuals interested in higher education. www.pheaa.org

To learn more about the careers available in the Pennsylvania Science Technology Engineering and Mathematics (STEM) field, visit the following site. www.pasteminitiative.org

The Pennsylvania Career Education & Work Standards site provides resources, references, crosswalks and other tools to assist elementary, middle and high schools teachers and administrators in implementing academic standards. www.pacareerstandards.com

Registered Apprenticeship

As you explore your career options, you may want to consider a registered apprenticeship. As an apprentice, you'll receive paid, on-the-job training and academic instruction that develops the skills needed to advance in your chosen career. In other words, you will be paid to learn!

Benefits of enrollment in a registered apprenticeship:

- Learn and earn: You will be paid while you develop your skills.
- Increase in wages: The pay progresses as you do.
- On-the-job training: A mentor will work with you in a real-world setting.
- Related classroom instruction: Class work provides the knowledge to supplement the training experience.
- Completion certificate: Employers everywhere recognize a journey worker's license.

Facts about Apprenticeships:

- In 2006, more than 15,000 individuals participated in Pennsylvania apprenticeship programs.
- The average starting wage for Pennsylvania apprentices is \$12.50 per hour.
- Upon completion, the average wage for an apprentice in Pennsylvania is \$23.75 per hour (\$49,400 per year).
- The construction and manufacturing industries make up almost 50 percent of all apprenticeships.

So, if you want to become a highly paid and valued employee, relish the challenge of learning a new skill and like to earn while you learn, entering a registered apprenticeship training program could be for you.

Top Apprenticeships for Pennsylvania

Machinist
Electrician
Tool & Die Maker
Plumber
Cook
Maintenance Mechanic
Heating & Air Conditioning Mechanic
Pipe Fitter
Sheet Metal Worker
Corrections Officer

Source: U.S. Department of Labor, Office of Apprenticeship

Military Training and Careers in the Armed Forces

In today's world, there are hundreds of occupations from which to choose, and it's important that you spend some time exploring the options available to you. The United States Armed Forces is one alternative you may want to consider.

The U.S. military has changed dramatically over the past several decades. Today's military is more professional, more technologically advanced and offers more benefits and rewards than ever before.

Maintaining a strong national defense includes such diverse activities as commanding a tank, running a hospital, repairing a helicopter and programming a computer. The military provides full-time and part-time training and work experience for more than 4,100 different jobs, 88 percent of which have direct civilian counterparts.

In the military, you can learn marketable job skills, make good friends, and develop a positive, winning attitude. The pay scale is competitive with many starting salaries in the private sector, and many allowances paid out by the military are tax-exempt. If a college education is one of your priorities, tuition support programs are one of the ways that the military can help you with the rising cost of postsecondary education.

If you want to go to college before joining the military, consider a Reserve Officers Training Corps (ROTC) program. These college-based, officer-commissioning programs produce 60 percent of all officers serving in the U.S. Armed Forces. If your high school has a Junior ROTC program, it will teach you problem-solving, ethics and leadership skills before you enlist.

Serving in the military is really what you choose to make of it. It can simply be a means to an end – money for college or technical training and the development of life skills – or it can be a lifelong career path, giving you a structured environment, a defined purpose and many opportunities to advance and grow.

In order to join the service, you must be 18 (or 17 with permission from your parent or guardian) and a U.S. citizen or legal immigrant holding permanent resident status. Most enlisted personnel need at least a high school diploma, while officers need a bachelor's or an advanced degree. Enlisting in the military is a major step in a person's life. Before you make a decision to join, gather as much information as possible about the branch of the service that interests you. Each one differs in specific programs, terms of duty and enlistment options.

Explore websites like www.myfuture.com and www.todaysmilitary.com to learn more about military life and careers. Make certain your military commitment is based on sound information and realistic expectations. Do your homework so there won't be any surprises.

For more information, contact your nearest recruiter (listed in the phone book) or call one of the following toll free numbers:

For more information, contact your nearest recruiter (listed in the phone book) or call one of the following toll free numbers:

Service	Toll-Free Number	Web Site
U.S. Army	800-USA-ARMY	www.goarmy.com
U.S. Navy	800-USA-NAVY	www.navy.com
U.S. Air Force	800-423-USAF	www.airforce.com
U.S. Marine Corps	800-MARINES	www.marines.com
U.S. Coast Guard	877-NOW-USCG	www.gocoastguard.com
Air National Guard	800-T0-GO-ANG	www.ang.af.mil
Army National Guard	800-GO-GUARD	www.nationalguard.com

Veterans' Benefits

The benefits of military service don't end once you leave the military and enter civilian life. In fact U.S. military veterans are entitled to a wide range of educational, career and employment services.

One of the best known – and most popular – of these benefits is the G.I. Bill, which was signed into law in 1944. This program was updated in 2009 to implement a new GI Bill called the Post-9/11 GI Bill. The new GI Bill is designed to enhance and expand educational benefits to service members and veterans who served on active duty following Sept. 11, 2001. Since the program began, more than 21 million veterans have benefited from the GI Bill. In 2005 alone, the U.S. Department of Veterans Affairs helped pay for the education and training of 499,000 veterans, active-duty personnel, reservists, National Guardsmen and survivors.

Financial aid for education isn't the only benefit of having served in the military. Veterans also receive free assistance with finding and obtaining a job. By law, PA CareerLink® offices and the State Civil Service Commission must give priority to veterans over other job seekers. Each PA CareerLink® has specially trained Local Veterans Employment Representatives who provide veterans with a full range of employment services. Disabled veterans also receive additional priority and assistance. PA CareerLink® representatives focus on helping those veterans with service-connected disabilities readjust to civilian life.

Planning on leaving the service?

Check out Pennsylvania's Transition Assistance Programs (TAP). The state offers job-search assistance and related services to separating service members during their period of transition into civilian life.

More information on the GI Bill and other veterans' programs can be found by contacting the Pennsylvania Department of Military and Veterans Affairs or the U.S. Department of Veterans Affairs.

Pennsylvania CareerLink®
www.pacareerlink.state.pa.us

Veteran Affairs

Pennsylvania Department of Military and
Veteran Affairs
www.milvet.state.pa.us
800-54-PAVET

U.S. Department of Veterans Affairs

www.va.gov
800-827-1000

Source: U.S. Department of Veterans Affairs



Standardized Testing

While good grades in high school are important in helping you get into the college of your choice, colleges also strongly consider each applicant's scores on usually one of two standardized entrance tests, the SAT Reasoning Test and the ACT (American College Test). The chart below shows the differences between the two. Check with the colleges to which you are applying to see which test they require for admission. Colleges take these standardized tests very seriously when determining

admission, scholarships, financial aid and even enrollment into some specific programs of study. If at all possible, regardless of the exam you take, try to take it twice. Keep in mind that colleges generally place more weight on the higher set of scores.

Being overly anxious could prevent you from performing your best on SATs or ACTs. Here are some tips to ease anxiety and make sure you're prepared:

- Know the instructions and format thoroughly before going in. This helps avoid losing time rereading the instructions when you could be answering the questions or rechecking your answers.
- Take a pretest, either on paper or on a computer, become familiar with both the format and the types of questions that will be asked.
- Take a preparatory course for a fee, or buy or borrow one of the many books focused on SAT or ACT preparation. These test-prep methods are useful in learning tips and techniques for improving your score.
- Get a good night's sleep the night before the test, and have a healthy breakfast the morning of the test.
- Take a snack to eat during test breaks, preferably something that will give you an energy boost.
- Remember that all questions are weighted equally, so if you can, finish answering the easy questions first.
- You have a limited amount of time for the test. If you get hung up on a particular question, mark it so you can come back to it later, and then move on.
- Be extra careful that you don't accidentally skip a question in the test booklet, and thereby inadvertently begin providing "right answers" to wrong questions all the way forward. Throughout the exam, vigilantly monitor that the question number you're working on in the booklet, matches that found on your answer sheet.
- If time permits after answering all the questions, go back and check your work.
- Be sure to erase any stray pencil marks on the test sheet or booklet after completing the test.

ACT		SAT
The ACT tests your skills in English, math, reading and science, with an optional writing portion.	What do the tests focus on?	The SAT tests your critical reading and mathematical reasoning skills, with a mandatory writing portion.
The ACT composite score is based on an average of the various sections of the test and ranges from 1 to 36. The national average score in 2009 was 21.1. You decide which scores are sent to your schools of choice.	How is scoring handled?	Each section of the SAT has a range from 200 to 800, making the total range 600 to 2400. The national average SAT score in 2009 was 1509. Your entire score history will be sent to your schools of choice.
There is no wrong-answer penalty in the ACT. If you do not know an answer and can't eliminate possibilities, you may as well try your best guess.	Is there a penalty for wrong answers?	The SAT penalizes test-takers for incorrect answers. If you don't know the answer and can't eliminate a few options, it's probably better to leave the answer blank.
\$32 (plus \$15 for writing); 3 hours, 25 minutes (including optional 30-minute writing test)	How much and how long are the tests?	\$45; 3 hours, 45 minutes
The ACT is administered six times a year. You should register at least four weeks before the test date.	When should I register?	The SAT is administered seven times a year. You should register at least six weeks before the test date.
www.act.org	websites	www.collegeboard.com

The Costs of College

The pursuit of higher education is an increasingly popular decision. For many, it is also an increasingly expensive one. Depending on the institution, tuition combined with room and board charges can total anywhere from \$6,000 to more than \$40,000 a year.

And don't forget all those additional costs...

While budgeting for a college education, there are many costs that parents and students tend to overlook. Here's a list of some of them:

- Laundry
- Transportation
- Basic toiletries
- Cable TV/internet/phone
- Computer and school supplies
- Social activities such as artistic events, athletic tickets and nights out on the town
- Textbooks: According to the Washington Post, books and supplies cost students nationwide an average of nearly \$900 – and this continues to rise.

The table shows the average costs of undergraduate education in Pennsylvania at different types of schools. It provides the costs of both in-state tuition & room and board per year (for community colleges, only the cost of tuition is available).

	2010-2011	
	In-State Tuition	Room & Board
College of Technology	\$6,560	\$7,650
Community Colleges	\$3,432	N/A
Private Colleges and Universities	\$27,487	\$9,688
Private State-Aided Institutions	\$30,002	\$9,929
Private Two-Year Colleges	\$15,845	\$7,849
State-Related Commonwealth Universities	\$12,742	\$8,946
State Universities	\$7,766	\$7,967
Theological Seminary	N/A	\$7,155

Source: Pennsylvania Department of Education

Financial Aid

Education after high school can be quite expensive. So if you haven't been saving for college since birth, how will you pay for it? You'll be glad to know that there are many financial aid options available for postsecondary education. Essentially, there are five options for financial assistance, each differing in terms of repayment and eligibility:

Grants: Typically, grants are based on financial need and do not have to be repaid.

Scholarships: Like grants, scholarships do not have to be repaid. They can be awarded based on financial need, academic merit or athletic ability.

Loans: Loans are a form of aid that must be repaid with interest after leaving school. The most common of these are the Perkins and Stafford loans, although private and alternative loans are also available.

Work-Study: Based on financial need, work-study programs provide employment opportunities to students both on and off campus.

Military Funding: Several military branches offer substantial financial aid packages in exchange for varying terms of service.

For more information on how to apply for financial aid, visit the Pennsylvania Higher Education Assistance Agency website at www.pheaa.org. For additional information about the education benefits available to military veterans, visit the U.S. government student website at www.students.gov.

To-Do List for High School Students

When you're in high school you have a lot to think about, especially during your junior and senior years:

What am I going to do after graduation?

Am I headed for college, vocational training or right into the workforce?

How am I going to navigate the path I choose?

This section of the **Career Guide** offers you some help by giving you a general to-do list to follow. When dealing with specific matters, such as application or financial aid deadlines, pay particular attention to the school's requirements, rather than these suggestions. Consider this list more of a guide than actual rules.

The to-do list is divided into two sections:

- A brief overview of what you should be doing prior to your senior year to prepare for life after high school.
- A month-by-month planner that is divided into three categories: for college-bound students, for students seeking other postsecondary school training and for students seeking to immediately enter the workforce.

1. What to do before your senior year begins:

- Take a skills or interest assessment to learn a bit about yourself. What are you good at? What do you enjoy doing?
- When you find a career path that interests you, learn more about it. You might find it's exactly what you want to do or find that the day-to-day work would bore you.
- Talk to your school guidance counselor about your options or prospective plans.
- Make sure you take classes that fit your career goals.
- Take the Preliminary SAT (PSAT), which is good practice for the SAT. A good score on the PSAT could qualify you for a National Merit Scholarship.

- Be sure to get involved in part-time or volunteer work and extracurricular activities. These can give you valuable insight about yourself and look good on a résumé.
- Consider taking the Armed Forces Vocational Aptitude Battery(ASVAB) test, especially if you plan to enlist in the military after high school.
- Attend college fairs, career fairs and job fairs held at or near your school. These are great ways to gain information on prospective careers, as well as network with people in the field.
- Near the end of your junior year, review your transcript to make sure you will complete the classes you need to graduate.
- Finally, during the summer between your junior and senior years, if you plan on going to college, begin to narrow down your list of choices. This will keep your application fees to a minimum down the road. Also, if you are considering a school out of the area, the summer might be a good time to make a campus visit.

Accomplishing these things before your senior year will give you a sense of direction and purpose as you complete your high school education. Now, here's a look at what you should do during your senior year, based on your chosen career path.

2. Month-by-month planner

	Key
C	Four-year college bound
T	Other postsecondary training
W	Going right into the workforce

September

C

Get your applications and financial aid information from the schools you are interested in attending. Find out whether the schools you're looking at prefer the ACT or SAT. Register for tests and look into taking a practice exam. Now is also the time to begin asking if teachers, bosses or other people will be willing to write letters of recommendation for you. If you plan on applying through an early action or early decision program, you should begin working on these applications now. Additionally, begin working on applications to college that conduct rolling admissions. Many colleges determine housing on a first-come first-served basis, so applying early to these institutions can be advantageous. There are currently 66 colleges and universities in Pennsylvania who offer rolling admissions, including Penn State University, The University of Pittsburgh and Temple University.

T

Figure out where you want to be a year from now, and plan to get training in that field. Learn as much about that field as you can, including getting a part-time job or volunteering in that field.

W

Take an interest or skills test (similar to the one we provide in this guide) and talk to a career counselor to get an idea of what kind of work you want to do. Do your interests lie in a career that offers apprenticeships?

October

C

This is the ideal time for college visits, especially to nearby schools. Many colleges have college fairs, which are a good opportunity to get more information and any forms you might still need. Take the ACT if any schools on your list require it. Many schools only consider the highest of any scores that you receive on these types of standardized tests. It is important to know what the policies are of the schools on your list. If you are unsatisfied with a score that you receive, taking the test again may be a good option.

T

Figure out how post-high school training fits in with your career plans. What kinds of training will you need to do what you want to do, and how long will it take? Are you looking to earn a certification or an associate degree? Will you be able to work while going to school?

W

Figure out and list for yourself your strengths, experiences and accomplishments. Also list any jobs you might have had in the past. Would your interests lead you to starting your own business? If so, look for resources on entrepreneurship.

November

C

Begin working on your college essays or writing samples, and be sure to have someone proofread them for you. If any of the schools you are applying to require the SAT you should take it now, if you haven't done so already. Submit applications for early decision/early action programs. If you plan on entering an ROTC program, the application is due Dec. 1.

T

Start researching which schools will have the training programs that you'll need to get into your field of choice. You may be looking for degrees provided by a local community college or something more specific, such as studying electronics at a school that specializes in it.

W

Take the list of strengths, experiences and accomplishments on which you've been working on and begin assembling your résumé.

December

C

Sign up for spring administrations of the SAT or ACT. Pick up a FAFSA (Free Application for Federal Student Aid) form. You'll also want to check to make sure your SAT or ACT scores have gotten to your schools of choice. If you applied early to any schools, your application responses will arrive this month.

T

Begin visiting the schools you're interested in attending. Just because a school is nearby or in the same town doesn't mean you shouldn't spend the time to conduct a proper visit of the facilities. Fill out a FAFSA and look for financial aid opportunities if you have not already done so.

W

Make sure you've polished your résumé. The holiday break is a good time to put that résumé to use in getting a part-time job, hopefully in a field that interests you.

January

C

Work on your FAFSA forms. FAFSA forms require a good deal of tax-related information, so you'll need your parents to gather that well before April 15. Also begin a serious hunt for outside scholarships. Be aware that some schools consider your first semester grades from your senior year in the form of a mid-year grade report.

T

Make a list of deadlines. Begin applying to schools and start assembling your writing samples or portfolio, whichever the case may be.

W

Work on planning a budget for yourself. Figure out what your fixed expenses are likely to be, and don't forget to budget for incidental expenses that crop up from time to time. This is good practice, whatever your future plans may be.

February

C

If you haven't already done so, complete the FAFSA forms and send them to your schools of choice. Make a list for yourself, ranking your college choices. You should contact all colleges to which you have submitted applications and confirm that they have received all of the necessary application materials.

T

Keeping any deadlines in mind, continue the application process. Follow up with schools to ensure that nothing is missing from your application. This gives you time to provide anything you may have forgotten.

W

Work on your résumé again, including your most recent part-time employment. Remember, you're about to step up to full-time employment, so think about what it is you want your resume to say about you, and revise it again.

March	
C T W	Watch the mail. You should be hearing back from schools soon. You should also be receiving your Student Aid Report (SAR) in response to any financial aid applications. The SAR can also be emailed if you list an email address on your FAFSA, so watch for it there, too.
	Time to wait. Watch the mail and look for acceptance letters as well as scholarships for financial aid that you applied for.
	Time to start learning even more about potential employers; research companies that interest you to see what kinds of jobs they offer and how you would fit into the company. This kind of homework isn't just about learning where to apply. Having this knowledge will come in handy when you're interviewing.
April	
C T W	Wait until you've heard from your preferred school before you decline any offers. Also, make sure to meet any other deadlines, such as for housing or more financial aid.
	Continue watching the mail for acceptance letters and financial aid offers from schools.
	Talk to the people you want to use as references. Get their permission before listing them! Teachers, coaches, counselors and employers are all good choices. Make sure to get a summertime or home phone number for those who will be on vacation.
May	
C T W	Make your final college choice. The enrollment deadline for most schools is May 1, so make sure that you mail the enrollment form and deposit check to the school you have selected. Decline any offers that other colleges have made to you, so the spot being held for you can be given to the next person in line. Take any advanced placement (AP) Exams.
	Be prepared to begin any training or courses that might start before the usual fall semester begins. Some year-long or two-year programs require you to begin earlier in order to complete them.
	Get ready to get a job. Yes, that sounds daunting, but that's what you've been building up to all year long. Prepare some cover letters and practice interviewing, then get out there. A final piece of advice: Don't just jump at the first job that comes along. Be sure to choose the job that fits both your needs and your skills.

PA CareerLink®

With nearly 70 local, professionally staffed locations through Pennsylvania and with online access 24 hours a day, PA CareerLink® is there to help you find a job.

From pharmaceutical companies to hospitals, financial management institutions to software corporations, local schools to manufacturing firms – PA CareerLink® will connect you with some of the best job opportunities in the state.

**Need help getting started?
PA CareerLink® has that covered too!**

The PA CareerLink® staff will help you:

- Assess your skills
- Plan a career path
- Build your résumé and polish your interviewing skills
- Identify networking opportunities and jobs fairs in your area
- Locate training programs in order to gain new job skills
- Connect with financial aid options to further your education
- Find and get the right job

You can visit PA CareerLink® online at www.pacareerlink.state.pa.us to:

- Develop an online résumé
- Store multiple custom tailored résumés and track positions for which you've applied
- Access information regarding statewide training programs and labor statistics
- View tens of thousands of job openings
- Research a company's business profile

- Apply for the jobs that pique your interest
- Find the physical location of a local PA CareerLink®

Attention Job Seekers:

Trade Adjustment Assistance (TAA) is a federal program that assists workers adversely affected by foreign imports. TAA provides workers with the means to attain competitive and marketable skills that allow them to rejoin today's increasingly competitive work environment.

Benefits include:

- Occupational training
- Wage replacement for older workers
- Relocation reimbursement
- Income support
- Out-of-area job search
- Health coverage tax credit

Additionally, weekly Trade Readjustment Allowances (TRA) may be payable to qualified workers following the exhaustion of state and federal unemployment compensation benefits. Workers may also be eligible for federal tax credits for the cost of health insurance. For more information about TAA or TRA, contact your local PA CareerLink® office.

"I found the PA CareerLink® service to be a valuable tool in my job hunt. The staff was helpful and provided some great resources."

– Jill Konieczko, Pennsylvania resident and job seeker

"My management team and I are enthusiastic fans of the PA CareerLink®. Over the last two years we have hired a number of quality, new agents directly as a result of the program.... I highly recommend use of the [PA CareerLink®] system for all employers to help them meet their staffing needs."

– Russell DeJulio, general manager, American General Financial Group

Networking

Twenty percent or fewer of all job openings are ever advertised. Most jobs are filled through personal referrals, direct contact with employers or employment agencies.

The key to networking is to make as many contacts as possible by meeting and talking to people who can help you learn about job openings and opportunities. Make sure to be specific about what you are looking for and how they can help. For instance:

- Make a list of friends, relatives, teachers or anyone with whom you may have a common thread. They might know of employers looking for your particular skills. Ask for tips, leads and suggestions to help you reach your goals. Take advantage of your “connections” and contact those employers or leads. Even if you don’t get the job now, they might remember you later or even point you in a better direction.
- Attending a career fair is a particularly effective way to network. You’ll have the opportunity to meet with representatives from multiple industries, and to submit your résumé to several potential employers.
- Make an effort to learn about local employers and any you contact. Find out who’s hiring, what type of work they do and who to contact about job openings. One of the best ways to go about this would be to check out the company’s website.
- Some good ways to start networking would be to attend career fairs, join a student or professional organization or network online. Don’t be afraid to approach new people. More times than not you’ll find a way you can help the person, or learn they are able to help you out.

Online Networking

It was not that long ago when getting tagged in a photo meant that someone took a picture of you getting punched, and writing on someone’s wall could get you busted for graffiti. But with the dramatic increase in the number of people signing on to social networking websites, these phrases have taken on whole new meanings.

When these sites started popping up a few years back, they were primarily used by college students and recent graduates as a means of keeping in touch with social acquaintances and friends. However, with millions of accounts on platforms like Facebook, MySpace, Twitter and LinkedIn, there is a good chance that everyone from your boss to your grandmother could be looking at your profile right now.

Thousands of people use these sites when searching for jobs or seeking out potential clients. But despite all of the positive and beneficial

applications these tools provide, there are also several ways that improper and careless use can affect your personal and professional life.

In March 2009, an employee of the Philadelphia Eagles was fired from his job of six years for posting a comment on his Facebook page concerning his dissatisfaction with management for releasing one of his favorite players. A few weeks prior to that, two nurses were fired from a hospital in Wisconsin for posting pictures of a patient on their Facebook accounts. This phenomenon has become so common that the term “Facebook fired” now appears in the online Urban Dictionary and is defined as, “being fired for something you post on Facebook.”

The simple fact is that social networking sites are tools, and tools have the potential to be dangerous if the proper precautions are not taken while using them. Here are a few suggestions to ensure safe use of social networking:

Don't post anything on your profile that you wouldn't be comfortable with showing up on the front page of your local newspaper. While you may post that picture of you out on the town last Saturday for the enjoyment of your friends, keep in mind that if they can see it, so can everybody else.

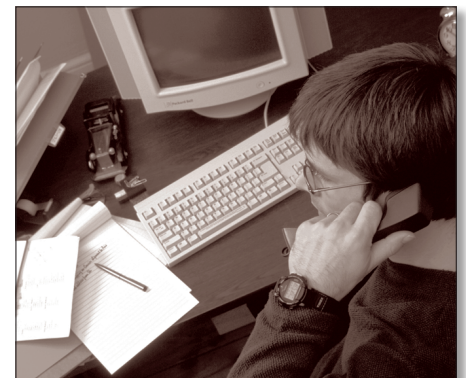
Don't use your profile as a way of venting about what's going on in your life. If you have a bad day at school or work, writing a couple of paragraphs about it may help you to blow off some steam. Keep in mind, though, that we all tend to say things out of frustration that can be quite hurtful if they are taken out of context.

Keep private information private. Information such as your home phone number or address can provide potentially dangerous people with unwanted access to your personal life. Additionally, cyber criminals thrive on information regarding your pets or grandparents' names, as these are the questions that banks and credit card companies use to verify your identity.

Remove comments posted by others that can get you in trouble. You can't always keep your friends or others from posting material that you don't want to be seen online. It is therefore important to remain aware of what is posted and remove information that could be harmful or ask those who posted it to remove it.

Do not admit to doing anything illegal. Even if you are joking it is very difficult to undo such an admission. The police are just as capable of using social media sites as anyone else. The best bet is to avoid doing anything illegal in the first place.

If you keep these general rules in mind while using social media networks, there is no reason why these networks can't be a great tool to help you keep in touch with old friends, make some new ones or even land that job you've been looking for.



Obtaining and Retaining a Job

YOUR RÉSUMÉ

Making a Great First Impression

Think of your résumé as your personal sales brochure. It establishes a first impression of you and plays a pivotal role in whether or not you will get an interview.

But a résumé is more than a summary of your skills, experience and education; it is an advertisement of your best self. A prospective employer wants to know where you have worked and what skills you can bring to the workplace. So when touting your accomplishments, be specific. Give specific examples of where your skills brought about significant results. Instead of stating “good decision maker,” say “Made decision to streamline and increased profitability by 30 percent.” This could lead to a productive discussion during your interview.

Developing Your Résumé

Research suggests that your résumé has less than 20 seconds to catch someone’s eye and make the right impression. Take time to make it eye-catching and easy to read. To create an impressive résumé, it should be:

Well written: No spelling or grammatical mistakes. Keep it clear and concise. Have someone proofread your résumé before you give it to an employer.

Attractive: It should be typed and professional in appearance. An employer should be able to glance over the résumé and read the main points.

Concise: Your résumé should be as long as it has to be, and no longer. For a student, one page is usually sufficient.

Relevant: Include only information having to do with the job you are seeking or your career goals.

Personalized: Use the style and format that best reflects your needs and accomplishments.

Appropriate: Information and format must conform to employer expectations. An artist, for example may appropriately include graphics, while a banker should not.

Résumés can vary in appearance, but most consist of the following components:

Personal Data: Your name, telephone number, address and email address.

Education: List educational levels in reverse chronological order, most recent first. Include details relevant to the job, such as courses or special projects.

Work Experience: Summarize your work experience, focusing on your tasks and accomplishments. Include relevant unpaid work experience.

Activities: List those activities most relevant to your occupational goal. Include school, community and professional activities.

Common Complaints about Résumés

Listing objectives or meaningless introductions: Vague objectives and overly general introductions don't tell the reader anything of value, wasting their time and valuable résumé space. Tell them who you are and what you do by making a single, clear statement.

Writing in either the first or third person: Using the first- or third-person voice risks turning your résumé into a narrative. It can take it from a short summary of your qualifications into a second, redundant cover letter.

Important information is too hard to find or absent: Many employers see hundreds of applications a day and simply skim résumés. If some piece of information about you is important, make sure it is included and easily seen.

Too Long: A résumé is not a second cover letter. You want to concisely state your qualifications for the job, your work history and accomplishments. But don't overdo it. The ability to be concise is looked upon favorably by most employers.

Personal information not relevant to the job: There are times, such as when your hobby is related to the job you are seeking, that including personal information can help you. Most times, however, don't include information that can be wrongly interpreted or open the door to some type of prejudice on the part of the résumé reviewer.

Too duty oriented with accomplishments not highlighted: A list of duties from a previous job just reads like a job description. Instead, briefly describe some of your accomplishments, which give the résumé a personal flavor while highlighting your talents and initiative.

Unprofessional email addresses: The résumé is your first contact with the employer in the hiring process, always try to make a good impression. An email address that is the same as your name will do just that. "HotPants021" won't.

Gaps in employment: In the interest of brevity, don't explain gaps in your employment in the résumé. Leave that for the cover letter, but be ready to again explain the gaps in your interview.



See the
Resource Guide
for more
information

Posting Your Résumé Online

Posting résumés and conducting job searches online is becoming more and more popular. While this makes the process of getting your name out there much easier, it does not increase your chances of getting a job. Companies receive hundreds of applicants for each job listing through online forums. If a résumé does not stand out, it may be immediately discarded. When posting online, you have a much better chance of successfully obtaining a job if you read the job description very carefully and then tailor your résumé to it. Putting hours of effort into a few job postings can be more effective than putting minimal effort into hundreds.

For more information about résumés and cover letters, check your local library or bookstore.

The Internet can also be a valuable resource for résumé and cover letter preparation. You might find the following sources useful:

"Résumés for Dummies" by Joyce Lain Kennedy

"Résumé Writing Made Easy" by Lola M. Coxfod

"Résumés That Knock 'Em Dead" by Martin Yate

PA CareerLink®

www.pacareerlink.state.pa.us

The Riley Guide: Résumés & Cover Letters

www.rileyguide.com

Jobweb

www.jobweb.com

Rockport Institute

www.rockportinstitute.com/resumes.html

Employment 360

www.employment360.com/resume-writing-tip.html

Here are a few tips and precautions for posting your résumé online:

BEWARE OF FORMATTING REQUIREMENTS

Convert your résumé to plain text by saving it as a "plain text" or "text only."

Carefully proofread after converting; some errors may have occurred in the process.

Replace bullets with asterisks (*) or another symbol.

Do not use tabs or try to center the text. Left-justify the entire résumé.

Do not try to control the length of lines by pressing enter/return. It may appear differently on the employer's computer than it does on yours.

USE CAUTION WHEN PROVIDING PERSONAL INFORMATION

Do not list your phone number or your home address; the city name should be enough.

Do not list your references; say that you can provide them upon request for an interview.

Remove dates and specific company names. Use a general description of the company. Instead of "IBM," for example, use "a multinational information technology company."

Create a disposable email address that can be discontinued after obtaining the job. This protects you and might be more professional than your current email address.

DON'T LET YOUR RÉSUMÉ SIT

Résumés are normally arranged online by date of submission, much like job postings. If your résumé is good, but months old, an employer might think you are no longer available to hire.

Revise your résumé every two weeks; this keeps you near the top of the list. If the résumé hasn't caught someone's eye, making improvements might be necessary.

If you have no results after a few months, remove your résumé and try another website.

Remove all your résumé postings after obtaining a job.

Convey Your Abilities in Your Cover Letter

A cover letter should accompany every résumé that you send. Cover letters can be used to inquire about job openings or apply for known vacancies. The purpose of a cover letter is to capture the employer's attention so that they will read the résumé and grant you an interview.

A cover letter should be written to a specific prospect and not mass-produced. Address it to a particular person and, if possible, mention a specific job within the company. A sample cover letter is provided here to highlight the most significant aspects of a good cover letter.

Important Items to Check Before Sending Your Cover Letter

- Use correct spelling, grammar and punctuation. If possible, have someone other than yourself review your letter before you send it.
- Make sure that your cover letter is focused on what you can accomplish for the company, not how the company will help your career.
- Don't overuse the word "I" throughout the letter.
- Be clear and brief, but make sure that you have given enough information to interest the employer in your qualifications for the job.

Address a specific person, not "Dear Sir" or "Dear Personnel Director."

The body of your cover letter should highlight your main qualifications: the skills and experiences that relate to the job. Give examples that highlight your talents. Refer to, but do not repeat, your résumé.

Sign the letter boldly. A signature in blue ink shows the recipient it is not simply a photocopy.

Keith Gardner
108 Huntington Park Drive, Apt. 824
Boalsburg, Pennsylvania 16827
(555) 555-5555
Email: kgardner@hotmail.com

June 1, 2010

Dr. Mitch Shaver
Superintendent
Boalsburg Area School District
200 Third St.
Boalsburg, PA 16827

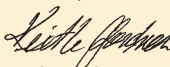
Dear Dr. Shaver:

Please consider this letter as an indication of my interest in applying for the middle school mathematics teaching position with the Boalsburg Area School District, which was advertised in the Centre Daily Times on May 31st. I am a very enthusiastic and creative teacher who enjoys incorporating new methodologies and activities to help engage students in mathematical concepts.

Having received a Bachelor of Science degree in secondary education from Boalsburg University and serving as a middle grade director at Camp Mahe, I have several years of experience in teaching and mentoring adolescent students. As a student teacher at Toftrees Middle School, I was given the opportunity to get my feet wet and immediately developed a passion for bringing out the best in my students. In addition to my classroom experience, I attended school-sponsored enrichment programs that enhanced my classroom management and instruction skills. I also demonstrated my energetic teaching and creativity as the middle grade director of Camp Mahe, where I supervised a group of counselors and designed their summer curriculum.

I hope to inspire and challenge the students of Boalsburg Middle School as a member of the faculty, and would like to request an interview to further discuss my qualifications. I will contact you in the morning later this week to inquire when your schedule may allow time for us to meet. Thank you for your consideration.

Sincerely,


Keith Gardner

Your address and contact information appear at the top of the letter when mailed. Your contact information is included at the bottom in the case of an e-mailed letter.

You should begin by stating the position for which you are applying and how you learned about the opening.

In the closing, request an interview; suggest a time for your follow-up call or contact. Never assume that the employer will call you.

The Job Application

Creating a Positive Image

In addition to a résumé, many employers require that you complete and sign a job application. The suggestions below will help you complete a job application and make a good impression on a prospective employer.

DEVELOP A PERSONAL FACT SHEET CONTAINING:

- Your Social Security number
- Names, addresses and telephone numbers of your spouse and/or close family members
- Schools attended, addresses and dates attended
- Names, addresses and telephone numbers of references
- Military experience, dates served, branch of military, relevant training and discharge type
- Past employment, dates employed, salary history and reason for leaving
- Any other information you feel is relevant to the application

PREPARE IN ADVANCE

- Know the deadline for applying and where to deliver your application.
- Read the entire application before starting to write.
- Answer all questions as honestly and accurately as possible. Some companies will terminate individuals on the basis of a dishonest application.
- Use a pen unless a pencil is required.
- Print all information legibly or type the form if possible.
- Be sure all spelling is correct.
- Emphasize your positive education, work and military experience.
- Focus on volunteer work, hobbies or training if they are job related and you have little work experience.
- Answer all questions; if a question does not apply to your background, write "N/A," or "Not Applicable."
- Have your résumé available in case you need it for information or to submit with your application.
- Have copies of transcripts, letters of recommendation and other documents ready to attach to your application form.
- Account for all gaps in your work history by stating your major activity during those times such as "job hunting," or "caring for a parent."
- When asked for salary desired, write "negotiable," "open" or give a salary range.
- Use "will discuss" or "will discuss in interview" rather than list potentially negative or damaging factors such as a felony conviction, health problem/disability or involuntary termination from a job.
- Keep a copy of your completed application so you can review it before your interview.

The Job Application (continued)

ABC Manufacturing Company Employment Application
Division of Human Resources, 700 Manufacturing St., Pittsburgh, PA 15222

PLEASE NOTE: Complete all parts of the application. If your application is incomplete, or does not clearly allow the experience and/or training required, your application may not be accepted. If you have no information to enter in a section, please write N/A.

Position Requested and General Information	
Name (First, MI, Last)	Social Security Number
Mailing Address	
City, State, and Zip Code	
Home Phone	Cell Phone
Position (Job for which you are applying)	Desired Salary

Additional Information	
Have you been an Employee of ABC Manufacturing in the past? [Yes] [No]	
I certify that I am in compliance with the provisions of the Selective Service Act ([Yes] [No])	
I certify that I am a U.S. citizen, permanent resident, or a foreign national with States. ** [Yes] [No]	
Have you ever been convicted of, or entered a plea of guilty, no contest, or had a [Yes] [No] If Yes, please explain.	
<small>** These questions must be answered in order to be considered for employment</small>	

Education		
Name of High School	Attended From:	To:
		Type of Degree or Diploma
	Attended From:	To:
		Type of Degree or Diploma
High School	Attended From:	To:
		Type of Degree or Diploma

ABC Manufacturing Company Employment Application
Division of Human Resources, 700 Manufacturing St., Pittsburgh, PA 15222

Work History			
Employer	Address	Supervisor	Phone Number
Job Title:	From: To:	Salary	May we contact this employer? [Yes] [No]
Reason for Leaving:			

Work History			
Employer	Address	Supervisor	Phone Number
Job Title:	From: To:	Salary	May we contact this employer? [Yes] [No]
Reason for Leaving:			

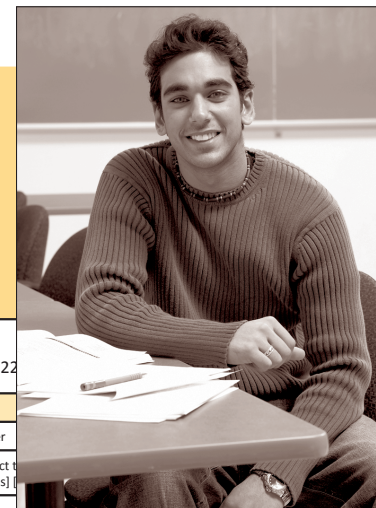
Work History			
Employer	Address	Supervisor	Phone Number
Job Title:	From: To:	Salary	May we contact this employer? [Yes] [No]
Reason for Leaving:			

References		
Reference:	Relationship to Reference:	Phone Number:
Reference:	Relationship to Reference:	Phone Number:
Reference:	Relationship to Reference:	Phone Number:

Signature:

Date:

I certify that all answers and statements on this application are true and complete to the best of my knowledge. I understand that should an investigation disclose untruthful or misleading answers, my application may be rejected, my name removed from consideration, or my employment with ABC Manufacturing Company terminated.



The Interview

OK, you've landed a job interview. Now it's important to make the most of the opportunity. The best way to do that is to be prepared. Here are some suggestions for what to do between the times an interview is scheduled and when it actually occurs.

Before The Interview

- **Research the company and industry.**
Make sure you know some facts about the company's history, what products or services it offers and the industry it serves.
- **Memorize a one-to two-minute commercial about yourself.**
Be ready to sell yourself with a summary of your education, achievements, skills and goals. It should sound natural, not rehearsed.
- **Be prepared for "dangerous" questions.**
Know in advance how you will answer questions about lack of experience, job-hopping history and gaps in employment.
- **Practice answers to anticipated questions.**
Almost all questions fall into one of the following seven categories:
 - **Are you trustworthy?**
Key Words: personal qualities; "who you are"
 - **Can you do the job?**
Key Words: skills, abilities, strengths
 - **Will you really work at the job?**
Key Words: initiative, attitude
 - **Will you fit in?**
Key Words: relations, co-workers, boss, customers
 - **Will you leave soon?**
Key Words: future, plans, goals, objectives
 - **Are you safe?** **Key Words:** conflict, stress
 - **Can I afford you?**
Key Words: benefits, salary, overtime, compensation

During The Interview

Do:

- Go alone.
- Arrive a little early.
- Be clean and well groomed.
- Bring extra copies of your cover letter, résumé, references and a pen.
- Address the interviewer by name.
- Smile and shake hands firmly.
- Listen carefully and be interested.
- Maintain good eye contact.
- Take time to think about your answers to interview questions.
- Speak clearly and use proper grammar.
- Ask for clarification if you do not understand a question.
- Be positive.
- Stress your qualifications for the job.
- Express your readiness to undertake the job duties.

Don't:

- Speak too fast.
- Interrupt the interviewer.
- Fold your arms.
- Sit with your arms or legs far apart.
- Smoke or chew anything, even if invited to do so.
- Say, "I'll take anything."
- Fiddle with pens, paper or desk items.
- Ask about salary.
- Criticize your former employers or teachers.
- Discuss personal or financial problems.
- Provide information that is not true.
- Beg for the job or hang around after the interview.
- Sit down until you are asked.
- Ask when a hiring decision will be made.

After The Interview

Thank the interviewer(s) for their time. Remember that you're in competition with others for job openings. What you do after an interview may decide who ultimately gets the job. To separate yourself from other candidates, take the time to write a brief follow-up letter to each person who interviewed you. This is one more chance to get your name in front of the interviewer(s) before a hiring decision is made. Also, don't be afraid to contact the interviewer(s) after some time has passed to check on the availability of the position for which you interviewed. This once again reestablishes your interest in the position.

Tips for writing an effective follow-up letter.

- Write and send it within 24 hours of the interview.
- Mention the day of your interview and the position for which you interviewed.
- Thank the interviewer(s) for their time.
- Reaffirm your interest in the position.
- Highlight the skills or accomplishments not discussed during the interview.
- State your availability for future interviews.

A Note About Criminal Records:

As in most things, honesty is the best policy. If you have a criminal record, don't lie about it on an application. That will get you fired and, even worse, could be punishable by law. It is much better to tell your prospective employer about your past rather than take the risk.

Before hiring you, an employer must feel that he or she can trust you in his or her place of business. A criminal conviction can be a red flag to them. A good reference from a parole officer, former employer or community leader can go a long way to diminish the sting of a criminal record when seeking employment.

Having a criminal record will have an impact on the kinds of jobs you are able to obtain. So, you have to be realistic in your job expectations. Keep in mind that the seriousness of the offense and the passage of time could make a difference to the prospective employer.

A Note on Substance Abuse:

You have heard this message a countless number of times: Don't use drugs! Not only is engaging in drug or alcohol use illegal, but it also leads to dangerous behavior. Substance abuse can have an adverse effect on your career. More and more employers are conducting drug tests on their employees or prospective employees. The U.S. military has a zero-tolerance drug policy; the federal government allows drug testing at all levels. Drug screenings may take the form of polygraph (lie detector) and tests of blood, urine or hair. It is important to note that many employers will dismiss employees or reject applicants on the basis of a positive test.

If you are asked to take a drug test, tell your employer about any prescription medications you are taking. Review the company policy on drug testing, and understand that if you refuse a test that may be grounds for disciplinary actions (including dismissal). False positives do occasionally occur, and are sometimes caused by over-the-counter drugs and some foods (poppy seeds are infamous for this). If this happens, discuss the option of retesting with your employer.

Again, substance abuse is not only illegal, but it can ultimately cost you your job. Engaging in drug and alcohol abuse will affect your physical and mental health, making you less sharp and an overall liability to the company.

Solutions: DON'T USE DRUGS.

Let your employer or prospective employer know about any prescriptions you might be taking. Know what the company policy is on drug testing. Understand that refusing a drug test might be grounds for disciplinary action (including dismissal), depending on the company policy.

False positives do occur. Over-the-counter drugs and some foods (poppy seeds are infamous) can cause a positive drug test despite the taker not being a drug user. If this happens, discuss re-testing with your employer at once.

Keeping Your Job: Professional Behavior at Work

You've been hired! That's great news. But it's important to understand that making a good impression doesn't end with the interview. Once hired, many people act in an unprofessional manner and make negative impressions on supervisors and coworkers. The result? They end up losing the job they worked hard to obtain and they don't have a good reference for the next.

Professionalism is one of many "soft skills" that today's employers say workers are lacking. Soft skills are intangibles that center on social interaction and communication within the workplace. Acting in a professional manner and learning other soft skills will improve your chances of succeeding within a company, even if you lack experience or have underdeveloped technical skills.

How Are Your Soft Skills?

- **Punctuality:** Do you arrive at work 15 minutes early, or do you rush around and get there a few minutes late?
- **Self-motivation:** Do you actively seek out work for yourself, or do you wait for someone to tell you what to do?
- **Flexibility:** When asked to do something you've never done before, do you rise to the challenge or complain that you don't know how to do it?
- **Teamwork:** Do you think working as a team is a waste of time, or does it motivate you to do your best?

You also have to realize that the mistakes you make at one job could stay with you as bad performance reviews, unfavorable references and as part of your professional reputation as you look for another job. With that in mind, the following is a list of professional behavior guidelines to keep in mind as you start a new job:

Basic Professionalism

- Schedule upcoming dental and medical appointments prior to starting a new job. It is best not to take off work early in your employment unless it's an emergency situation.
- Arrive to work on time, all the time. Being punctual shows you are reliable and responsible.
- Come to work clean and well groomed. Yes, it sounds obvious, but poor appearance leaves a lasting impression.
- Dress according to your duties. If your job is labor intensive, wear clothing that allows freedom of movement. If you work in an office setting, adhere to company dress code. When in doubt, err on the side of conservative dress.
- Take the time to read the office manual on policies and procedures. Then follow it.
- Keep your personal life personal. Don't address personal matters while you're on a company phone or company time.
- Remember that the supplies and equipment provided to you are there to help you do your job, and are NOT there for your own personal use.

Keeping your Job: Professional Behavior at Work (continued)

Outward Professionalism

- In any work environment, you will confront situations that cause frustration. When that happens, it's always best to remain cool and control your emotions. Shouting matches and dramatics rarely work to your advantage.
- Keep your opinions and biases to yourself. It's very easy to alienate someone with a single poorly chosen conversation; it's a lot more work to overcome the damage done by that conversation.
- Don't engage in gossip about co-workers or supervisors. First, it makes you look bad. Secondly, think about the people involved. How much would you like to hear rumors about yourself?
- Maintain a positive attitude at work. Cynicism and moodiness only serve to alienate co-workers.
- Similarly, make friends with and surround yourself with positive people who don't engage in gossip or play office politics. This is good advice for life outside the office, too!
- Always remember to be diplomatic and polite. Good manners can earn you nothing but respect at work.

Job Professionalism

- Get a feel for the culture of your workplace. If it's a corporate, professional environment, a laid-back attitude won't get you far. If the workplace is more relaxed, it's probably not to your advantage to be overly assertive.
- Be patient with yourself at work. You aren't expected to know everything, especially when you first start your employment. Learning the ropes takes time and impatience will lead to rash decisions and a poor attitude.
- Team players are highly valued. Be one, whether through support or encouragement. Always be willing to help your co-workers and employer.
- Another part of being a team player is shouldering your own workload. Don't make others set aside their projects to do your work for you.
- Use your performance reviews as a learning experience. The criticism offered in them is meant to be constructive – to help both you and the company – so don't get overly defensive.
- Be willing to take on new tasks. By learning new skills, you enhance your résumé and make yourself more valuable to your employer.
- Finally, you want to make yourself valuable to your employer, try to be "layoff-proof." At the same time, however, you don't want to be so valuable in your current job that you'll never be promoted.

Pennsylvania Office of Vocational Rehabilitation

The Pennsylvania Office of Vocational Rehabilitation (OVR) is a state agency that provides services to help persons with disabilities prepare for, start and/or maintain employment. Vocational rehabilitation provides opportunities for people with disabilities to become productive and independent in their communities. An estimated 620,000 Pennsylvanians between the ages of 16 and 63 have a serious physical or mental disability. OVR's first priority is to help people with the most significant disabilities obtain or retain competitive employment.

Bureau of Vocational Rehabilitation Services (BVRS)

The BVRS provides services to eligible individuals with sensory, physical and/or cognitive disabilities – except blindness or visual disabilities – both directly and indirectly through a network of approved vendors. Services are provided on an individualized basis. The BVRS counselor, during face-to-face interviews, assists customers in selecting vocational goals, services and service providers. Counseling and guidance, diagnostic services, assessments, information and referral, job development and placement, and personal services such as readers or sign language interpreters are provided at no cost to the individual.

Bureau of Blindness and Visual Services (BBVS)

The BBVS assists Pennsylvanians who are blind or have a visual disability to gain the necessary skills to live and work independently in their communities. BBVS services are provided throughout the commonwealth by professional staff in district offices in Altoona, Erie, Harrisburg, Philadelphia, Pittsburgh and Wilkes-Barre.

Hiram G. Andrews Center (HGAC)

The HGAC offers comprehensive services integrating education, counseling, evaluation and therapy in a barrier-free environment. HGAC's postsecondary trade and technical school is the Commonwealth Technical Institute (CTI), offering seven associate degree programs and 15 diploma programs. A collection of support services combine to offer students the skills they will need to live, work and contribute to the community. A new informational CD-ROM, "Take a Look Inside ...HGAC" provides an overview of the training programs and comprehensive support services. To request a copy of the CD or a CTI catalog, visit the HGAC website, www.hgac.org.

Pennsylvania Office for the Deaf and Hard of Hearing (ODHH)

The ODHH coordinates services for individuals who are deaf, hard of hearing or deaf-blind, as well as their relatives, friends, physicians, lawyers, counselors and employers. They are a liaison for people with hearing loss to government and private entities. The ODHH has offices in Allentown, Erie, Johnstown and Harrisburg.

OVR

717-787-7834 (Voice)
717-787-4013 (TTY)
800-442-6352* (Voice)
877-497-6545* (TTY)
717-787-7500 (BBVS Voice)
866-375-8264* (BBVS Voice)

HGAC

814-255-8200 (Voice/TTY)
800-762-4211* (Voice/TTY)

ODHH

717-783-4912 (Voice/TTY)
800-233-3008* (Voice/TTY)

* Toll-free within Pennsylvania

Online Resources:

Visit the Pennsylvania Department of Labor & Industry at www.dli.state.pa.us for more information on the following.

- OVR, related programs and a statewide office directory
- HGAC and the Commonwealth Technical Institute
- ODHH, an online resource directory and the Interpreter Registration Program
- Pennsylvania's disability resources
- Vocational rehabilitation job opportunities in Pennsylvania

Child Care

Parents entering the workforce have an overriding concern: Who will take care of my child while I am at work? For many workers, day care is the most realistic answer. If you choose this option, there are a few things to keep in mind:

- Find a child care provider able to accommodate your work schedule and transportation needs.
 - Check on availability. Openings in child care centers can be tough to come by in some instances.
 - If your child has special conditions or needs, find a provider that can meet them.
- Financial assistance may be available for families meeting certain work schedules and income requirements. Call the Pennsylvania Department of Public Welfare at 877-4-PA-KIDS to get in contact with your county Child Care Information Services office for more information.

Welfare-to-Work Programs

Welfare-to-Work programs exist to assist low-income or other hard-to-employ individuals in gaining employment or job training. Pennsylvania's program targets:

- Recipients of Long-term Temporary Assistance for Needy Families (TANF)
- Unemployed and underemployed non-custodial parents with child-support obligations
- TANF recipients with characteristics predictive of long-term dependence (such as no high school diploma, teenage pregnancy, poor work history, disability that does not prevent employment or youth)
- The Welfare-to-Work program provides case management, job preparation, job search and placement and other services to those who qualify. Contact your local PA CareerLink® office for more information.

Pennsylvania Center for Health Careers

With more than 24,000 openings per year, skilled health care workers are in high demand.

The Pennsylvania Center for Health Careers is an initiative of the Pennsylvania Workforce Investment Board that serves as a catalyst to develop action-oriented strategies to respond to Pennsylvania's short-and long-term health care workforce challenges.

The Center focuses on four distinct issues affecting health care:

- Increasing the capacity for Pennsylvania's nursing education system
- Retaining health care workers in health care professions
- Responding to the demand for critical allied health professionals
- Addressing the needs of direct care workers

For more information on the Pennsylvania Center for Health Careers, health care occupations and Health Careers Week (November) please visit: www.paworkforce.state.pa.us

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